the Pulse

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Letter from the Editors

There is no question that healthcare is at the beginning of tectonic change. Five years after the passage of the Affordable Care Act, consumers have greater power and influence in the market than ever before, CMS payment reform initiatives continue full-steam ahead, and billions of venture capital dollars are fueling a flood of new entrants with ambitions no less grand than reinventing the industry itself. If a potent mix of regulatory change and technological innovation transformed the financial services, travel, and media industries before – healthcare is finally having its moment in the sun. But how quickly will change come? And who will be the leaders driving it? Will it be intrepid incumbents? Or Silicon Valley-minded innovators leading the way?

As with prior editions, this year's edition of Pulse features a compilation of leaders from across the industry grappling with these questions in real time. With change seemingly being the only constant in today's industry environment, how does one place bets for the future? How does one pursue – or adapt in the face of – disruptive innovation with so much uncertainty ahead?

Given the level of improvisation this feat requires, the leaders featured here are of a unique breed. While the challenges each has grappled with – from provider transformation, to private exchange development, EMR deployment, HIV/AIDS response and more – are all of seemingly different flavors, the tenacity and creativity they've exhibited in responding to these challenges contains insights that can help every healthcare leader.

Our hope is that you take from these pages not only great stories, but great lessons and new ideas. Healthcare is indeed at the precipice of a once in generation change; the journey ahead promises to be exhilarating.

Sincerely,
Nick Bartz, Alli Chandra and Bernie Zipprich
Editors in Chief, Pulse 2015

Updates from the
Healthcare Exhcanges

Checking in on the Private Exchanges Model:

A Perspective from the Frontiers

An Interview with John Barkett, Director of Policy Affairs and Product Marketing, Extend Health

By Nicholas Bartz

As Director of Policy Affairs and Product Marketing at Extend Health, John Barkett has a deep understanding of the business of private exchanges as well as the political landscape that will determine its future. I sat down with John to discuss how the private exchange model, a relatively novel approach to employer-based health care coverage, is looking after several years of explosive growth.

Pulse: *Over the past few years, there have been a lot of questions hanging over private exchanges. Would employers actually switch to the private exchange model? Would private exchanges actually cut costs? Are we any closer to answering these questions today?*

John Barkett: The private exchange model is only now being tested on a large scale. In the next couple of years, we'll have a much better idea of the extent to which private exchanges will move from early adopters and fast followers to a sizeable market segment with employer sponsored coverage.

The key to growth will be cost containment. At Towers Watson, the average rate increase across all our 2014 clients was 1.8 percent. That's very low. If private exchanges can bring those types of rate increases to employers, then they'll definitely have a place in the future of employer sponsored insurance. And those savings aren't just coming from customers buying down. Those savings come from high value plan designs which engage employees, get them to shop for coverage, get them to think about their health, get them to respond to financial incentives, and get them to participate in wellness programs.

Pulse: *What do you believe are the components of a high-value plan?*

John Barkett: First, we focus on account-based health plans, plans that either come with a Health Savings Account or Health Reimbursement Account, high-deductibles and coinsurances. Second, we look at whether the plan contains wellness programs that are tied to incentives or disincentives to encourage healthy behavior. Finally, we ask seek out health plans that use care management to help employees with multiple chronic conditions obtain coordinated care rather than the fragmented care. In the case of Towers Watson, we ask insurance carriers to design plans with these features if they want to be on the exchange.

Pulse: *What are the challenges in engaging employers in switching to private exchange, high-value plans?*

John Barkett: The main challenge is inertia. Traditionally, Human Resources managers are often charged with keeping the noise level down during benefits season. They are incentivized to offer their employees a limited selection of plans. That's like your employer offering to pay for your car, as long as you choose either an Escalade or a Prius. Well, it turns out consumers' preference for meaningful choice extends even to products like health insurance. We see this in the economic literature, in the interactions with our customers, and in the satisfaction of our clients. When employers champion choice, it's a win-win for them and their employees.

Pulse: *What are the challenges in engaging consumers in plan choice?*

John Barkett: It's critical that each consumer finds a plan that satisfies her health needs, budget and lifestyle. No one wins if the consumer makes the wrong choice – not the consumer, not her employer, and not her insurance carrier.

To make the right choice consumers need to understand what they're buying. With low health insurance literacy pervasive in the market, it's our job to make sure our customers understand the difference is between a $20 co-pay and 20% coinsurance.

Private exchanges typically offer support for customers both online and over the phone. Our web tools let shoppers estimate their yearly out-of-pocket costs, sort plans by in-network providers, and compare plans according to what benefits are covered. The majority of our customers seek advice from our call center, where licensed benefit advisors are ready to answer questions and facilitate enrolling into a plan. The enhanced decision support is a key differentiator between a private exchange and a traditional employer plan.

"Insurers will have to start thinking like business to consumer companies. When was the last time you heard a health insurance company say their goal was to delight the customer?"

The private exchange can offer dozens of plan options, but still make that choice meaningful to each employee with technology that personalizes the shopping experience.

Pulse: *What future do narrow networks have on private exchanges?*

John Barkett: As a private exchange operator, you try to organize a marketplace that will attract employers because they think your marketplace offers a good deal to their employees. Today, employers largely don't feel comfortable with narrow network products, because the network they buy must be adequate for all of their employees.

A single person buying coverage for her household is much more likely to accept a narrow network, since she only has to determine if her family's providers are in-network. This is why narrow network products have done so well on the public exchanges up to this point.

I think we will see narrow network products on private exchanges more and more in the coming years. Every day we hear news of a new health system signing up to take insurance risk. In the past these managed care plans have had trouble breaking into the large group market, but private exchanges could make it much simpler for narrow network products make inroads.

PULSE: *Do you think there's going to be pushback/regulation of narrow networks?*

John Barkett: Health plans have to meet network adequacy standards today, but there are improvements that should be made. It's hard to believe that it's 2015 and we still have not made available to consumers accurate, searchable provider databases. Nor is it simple to understand network statistics, like what percentage of plan's primary care network is accepting new patients.

But I'd caution regulators not to be overzealous when regulating narrow network plans. They're one of the best mechanisms insurers have to push back against market-dominant health systems when they're at the negotiating table.

PULSE: *Do you think the benefits of the exchange model apply equally to self-insured vs. fully insured employers?*

John Barkett: I think so. In both models, the employer gets to offer benefits through a marketplace. They get insurers competing for each employee's business. They get to offer more options to their employees while reducing their administrative burden. At the end of the day, the decision of whether to fully insure or self-insure hasn't fundamentally changed. Do I accept the risk and get the efficiencies of a self-insured arrangement? Or do I pay a premium and de-risk my health care liabilities?

PULSE: *What are the benefits of a private exchange for a self-insured employer?*

John Barkett: Well, first off, you get the marketplace model, which brings choice and competition, which in turn drives down cost. This works in two ways. When insurers are forced to compete they negotiate harder on unit costs so they can offer competitive premiums and capture market share. On top of that, by offering multiple carriers, a private exchange lets employers and their employees access the carriers with the best rates in every market.

In addition, employers are always trying to drive engagement within their covered populations. In the past that has been done with increased cost-sharing during the plan year, but why not go all the way and get the employee involved from the very beginning? We find that when employees go from being passive recipients to active consumers of health insurance,

they find it easier to navigate health care system when the occasion arises.

PULSE: *What does the rise of private exchanges mean for insurance companies in the future?*

John Barkett: The biggest change is that insurers will have to start thinking of the employee – not the employer – as their true customer. This is not trivial. As private exchanges proliferate, consumers will have the option to keep their insurance carrier even when they switch jobs. Insurers will have to start thinking like business to consumer companies. When was the last time you heard a health insurance company say their goal was to delight the customer?

This, I hope, is the legacy of private exchanges: to bring the consumer one step closer to the "product" we buy from our health care system.

Profile

John Barkett

Policy Affairs and Product Marketing, Extend Health

John Barkett is the Director of Policy Affairs for the Exchange Solutions line of business of Towers Watson. He previously worked for Extend Health, the nation's largest private Medicare exchange, before it was acquired by Towers Watson in 2012. John is responsible for strategy development as it pertains to both federal and state health policy, as well as the product development and marketing of Towers Watson's various exchange solutions.

IS A PRIVATE EXCHANGE RIGHT FOR YOUR ORGANIZATION? (PART 2)

Private exchanges offer a new way for US employers to provide employer-sponsored benefits, while reducing costs and administrative burdens at the same time. Mercer introduced the Mercer Marketplace℠ private exchange in early 2013. In addition to the employer considerations described in Part 1 of this infographic, there are three ways employees could benefit from a private exchange.

PRIVATE EXCHANGES: TOP THREE WAYS EMPLOYEES WILL BENEFIT

1. EMPLOYEES WILL HAVE BROAD CHOICES.

Most employers agree that offering employees a choice of benefit plans is a good thing. But having to select and manage a variety of plans and benefit providers isn't always practical or desirable. Private exchanges make it easy for employers to provide robust benefit choices.

Offering employees more than one choice of medical plans is a best practice that is a key feature in private exchanges.

PERCENTAGE OF US EMPLOYERS WHO CURRENTLY OFFER ONLY ONE TYPE OF MEDICAL PLAN

81%	**52%**	**32%**
EMPLOYERS WITH 10-499 EMPLOYEES	EMPLOYERS WITH 500-4,999 EMPLOYEES	EMPLOYERS WITH 5,000 OR MORE EMPLOYEES
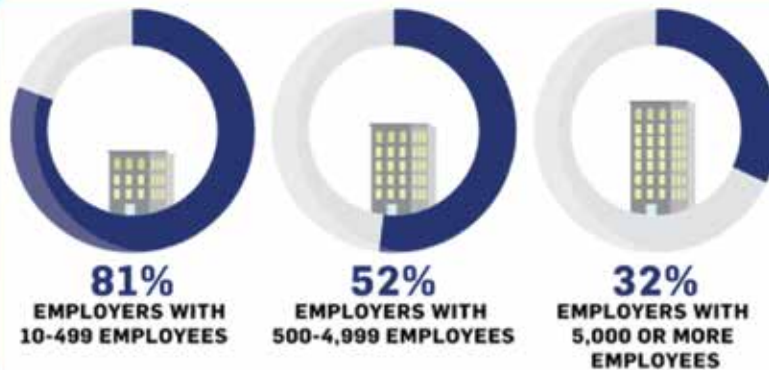
A private exchange also makes it easier for employers to offer a wider range of employee-paid voluntary benefits than are commonly offered today.

PERCENTAGE OF US EMPLOYERS OFFERING SPECIFIC TYPES OF VOLUNTARY BENEFITS

43%	**38%**	**3%**
ACCIDENT INSURANCE	CANCER/CRITICAL ILLNESS	AUTO/HOMEOWNERS INSURANCE
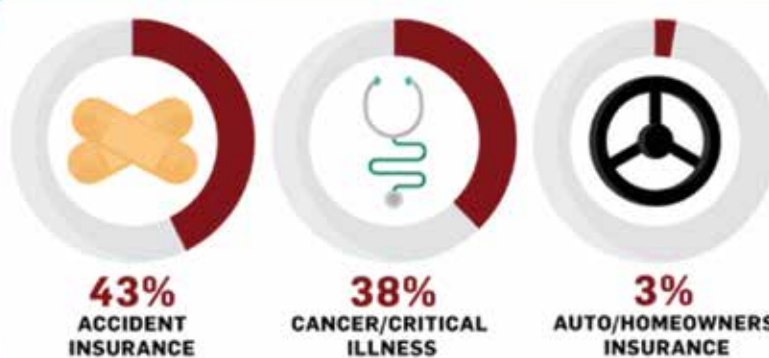
Entrepreneurship, Digital Health, and the Future of Exchanges

*An Interview with HealthSherpa Founder
and CEO George Kalogeropoulos*

By Alli Chandra

In response to the troubled Healthcare.gov launch in 2013, three entrepreneurs rapidly launched the elegant and well-received exchange website, HealthSherpa. HealthSherpa thrust itself into the spotlight in the middle of a national conversation criticizing Obamacare's implementation. A year later, Pulse catches up with founder and CEO George Kalogeropoulous to understand HealthSherpa's origins, its path going forward, and the future of exchanges and digital health.

Pulse: *Was HealthSherpa your first company?*

George Kalogeropoulos: HealthSherpa was born out of another company, a predecessor organization called RentMetrics. RentMetrics was a Y Combinator-funded startup founded in 2012 that was designed to help landlords with pricing for rental companies, so it was completely unrelated to HealthSherpa or healthcare.

In November 2013, Ning Liang (my cofounder) and I were trying to recruit one of our friends, Michael Wasser, for RentMetrics, so we invited him to come visit with us in San Francisco for a week. During those conversations we discovered that, like us, he was really passionate about healthcare and saw a great deal of potential for disruption in the space. We used a white board to brainstorm seven launch ideas in healthcare, and ended up building three of the seven things on the white board; HealthSherpa was one of them.

Pulse: *How did you come up with the idea of HealthSherpa?*

George Kalogeropoulos: The idea came at the exact time that CMS had launched Healthcare.gov, and the rollout was not working very well at all. For whatever reason, people had to fill out an hour-long application before Healthcare.gov showed them any plans and prices. We realized that data on plans and prices were actually publicly available and all we had to do was make it really easy for people see what plans were available to them and what they would cost without filling out a really long application.

We had actually built a product like this before: opscost.com. There's often this super valuable data that's locked up in government databases and isn't available in a user-friendly format. In 2011, CMS released these data sets that cover the reimbursement rates for in-patient and out-patient procedures in a gigantic spreadsheet with 130,000 rows. We basically built an easier to use web engine on top of the CMS data set that became relatively popular; people cared about this data because it actually affected their lives. That experience really is what prompted us to build HealthSherpa.

Pulse: *How did HealthSherpa get propelled into the national debate around exchanges?*

George Kalogeropoulos: Initially, right after we launched and sent it out to the press there was silence; no one cared. A week later, after we had sort of given up on HealthSherpa one of us posted it on Hacker News on a whim, just to share what we were working on with the rest of the startup community. That post made it to the front page of Hacker News and people begin to take notice. A writer from The Atlantic Wire picked it up and wrote a piece about it and we were thrust into the national spotlight. We were extremely lucky with the timing because it was such a pressing issue in the national news media. In that first month we had seven appearances on Fox News, three on CBS, two on CNBC, and the New York Times wrote two articles about us. During this period of our lives we were literally doing two or three television appearances a day. We had 1.5 million visitors in the first month of HealthSherpa's existence. That was an order of magnitude bigger than our

other business, RentMetrics, so we decided to see if we could turn HealthSherpa into a business. Stepping back, I believe that what really drives the success of a start-up is if you're solving the right problem and if you're in the right market. HealthSherpa was clearly targeting the right market at the right time.

Pulse: *How did you develop the business model?*

George Kalogeropoulos: Initially, we didn't know anything about health insurance. So the first thing we did was take all the traffic from our site and direct it to insurance agents who would pay us for these leads. We had pictures, phone numbers, and contacts established for the licensed insurance agents who, once you had selected the right plan through our site, would help you purchase it.

We found it was very difficult to audit the performance and behaviors of the insurance brokers. For example, customers would call the insurance broker with a plan in mind and the insurance broker would then try to switch them to a non-Obamacare plan in order to get a higher commission, or to avoid filling out a long application on Healthcare.gov.

So we decided to become licensed as an insurance agency ourselves. None of us had any direct experience with insurance so we had to learn it all from scratch and become licensed in all 50 states. We had to do some creative things like get a custom Errors and Omissions insurance policy from Lloyd's of London, the same place where Rolling Stones' guitarist Keith Richards insured his fingers. We had to do that because no traditional insurance company would insure a brand new, national insurance agency whose founders had zero insurance experience.

Because we had become so high profile, we were able to establish contracts with the top 100 major insurance companies. By the end of last year's open enrollment we had finally gotten all the logistics in place and signed up about 700 families in the last few weeks of open enrollment at about $300-$400 per family in actual revenue.

This year, we began licensing the technology to insurance agencies, benefits consultants, and insurance companies who also want to sign-up customers directly, and that has driven a lot of growth. Since November 15, 2014 (the start of open enrollment) over 100,000 people have signed up for on-exchange plans through HealthSherpa, so we've grown enrollments over 100x since last year (note that revenue hasn't grown 100x because the licensing fee is lower than the commission described above).

Pulse: *What are some of the fundamental differences you've noticed between public and private sector solutions?*

George Kalogeropoulos: A fundamental difference is that government has to serve everyone and has to provide a uniform level of service. The government has specific obligations. Their solutions must account for every possible edge case and they must implement the law in its entirety. Whereas we can focus on 95 percent of people and take the 5 percent of really complicated cases and ask them to go to Healthcare.gov whereas they can't do that; they are the backstop. When you're a technology company and a start-up, you can focus on specific end-users or customer bases potentially at the expense of others. What that means is that our applications only take 10 minutes to fill-out is because we do not have to ask every question in every possible area.

Another part of the complexity for government solutions is that laws and legislation are extremely complicated. While everything in the law was written with good intentions, they are necessarily very complicated which makes it very hard operationally and practically to implement. As an example, to qualify for a subsidy on the exchange, you can't have insurance from your job unless that insurance costs more than 9.5% of your gross household income to cover just you (the employee) or unless that insurance doesn't meet

"Really what drives a start-up is if you're solving the right problem and if you're in the right market. That's 90% of our initial success."

certain minimum standards. Try explaining and accurately determining that information in a 5-10 minute application. And there are dozens of things like that. So doing that well from a user experience and simplicity standpoint is really hard!

Our approach was to step back and look at the Healthcare.gov application holistically and try to determine what we could cut out. As an example, the Healthcare.gov application asks a three-year-old child whether he or she has had a job or recently lost insurance at their job. Now while there's certainly bound to be some three-year-olds out there who do have jobs, whatever it is three-year-olds do as professionals, you could clearly cut that out without it being a problem for most people. You can just say if you have a child under 12, they're probably not working. They're probably not married and they probably haven't lost insurance. In the private sector, we're able to optimize. That is a major advantage we have over Healthcare.gov.

Pulse: *How has HealthSherpa changed from the end of last year to this year?*

George Kalogeropoulos: We grew the number of people we enrolled 100x, from under 1000 to over 100,000. We became a web-based entity (WBE); an official partner with CMS. We have spent a lot of time responding and understanding how Healthcare.gov works. Because we're exclusively focused on it, we've been able to become experts on "Obamacare" plans and how to actually enroll in them.

CMS has been very impressive across the board. They are good about understanding our motivations as our incentives are entirely tied to their incentives; we both want to maximize enrollment. They have given us some great guidance and we have had a close, productive relationship.

We've also gotten sign-ups down to 10 minutes. We got all the logistics set-up at the end of last year and have been able to

build a compliant, great product. All of our integrations and interfaces are working much more solidly. This is important as the market is moving very quickly and we have a limited time to capture market share.

Pulse: *As HealthSherpa grows, how do you plan to maintain flexibility and innovation?*

George Kalogeropoulos: In order to maintain innovation, you must compartmentalize. You take the people who are doing the creative groundbreaking interesting work and you separate them from the people who are contracting with insurance companies or working on the regulatory side. They still need to touch bases so they understand each other but you must let them work independently. That's worked really well for us.

Interestingly, the counter-point is that a lot of companies try that separation and the end result is negative. Neither side understands how the other side works. One of the things we did early on was that the technical lead became an insurance broker. He finally understood what people got hung up on when he was spending his time on the phone talking to customers. All of those insights he got, no amount of spending can replicate those. If you define your market niche tightly enough, you can give that exposure without overwhelming either side and can maintain the segmentation.

Pulse: *What do you believe is the future for HealthSherpa and the exchanges?*

George Kalogeropoulos: What we've noticed is that half of the people who sign up for exchange plans on HealthSherpa don't qualify for subsidies; that means that people who have a choice between on- and off-exchange insurance are choosing to go to exchanges. If that trend continues, the insurance companies will choose to put their good plans on the exchanges and everyone will have access to the same health insurance – it's just that some people will get a subsidy and others won't.

For that to happen, the public exchanges of the future should be easily accessible, whether that's individuals signing up or the brokers and benefits consultants properly utilizing the system. Indeed, we think there's a lot of potential for inclusion of the existing insurance brokers as they could be the ones to dramatically accelerate uptake on the exchanges.

A future direction for HealthSherpa is helping take small groups, employers with 50 or fewer employees, on to the exchange. Obviously if you have less than 50 employees there's no requirement to offer insurance, so we see potential for employees to get more insurance choices through the exchanges, and for employers to save money because they'll have to contribute less towards health insurance costs. It would also be a breakthrough to have employees be able to keep their insurance when they leave their employer.

I believe there is going to be a bifurcation of small groups and individuals which will hopefully both go increasingly on the public exchanges whereas the larger groups and employers will stay as they are or move to private exchanges.

Pulse: *What are some of the potential consequences of this bifurcation between small versus large group insurance purchasing?*

George Kalogeropoulos: The positive is that more people are covered at a lower cost and more people get access to quality coverage. The negative is the potential for there to be a creation of "good" insurance versus "bad" insurance meaning you get lower deductibles and all kinds of bells and whistles that are unavailable on the public exchanges. We desperately don't want the Massachusetts outcome where the exchange

becomes where people are forced to go and the insurers offer limited plans with limited networks. We'd rather see as many people as possible using the exchange because it is the cheapest, highest quality available for people.

Pulse: *How can HealthSherpa help avoid some of the negative consequences of more limited insurance products?*

George Kalogeropoulos: The key is to make it as easy as possible for people to access the benefits of the Affordable Care Act, so that more of the market migrates to the exchanges. The way to do that is to let companies build great user experiences around the exchanges. A good analogue is TurboTax. You can file your taxes on IRS e-file (the government system) but no one does because TurboTax and its competitors are so easy to use. The law is the framework and private companies can build around that.

Pulse: *Private companies obviously have a lot of digital health solutions to offer. What are the areas in digital health that are rife for innovation?*

George Kalogeropoulos: The first area is using existing research and clinical trial data on the performance and effectiveness of drugs to correctly and definitely identify gold standard treatments. If you took a fraction of the money being funneled into new clinical trials and put it into building a proper data warehouse to aggregate and analyze existing data, you could save many lives.

The second area is making quality and performance data for providers and hospitals more accessible, transparent, and as a consequence, actionable. A part of this could be price transparency, like opscost.com. We have actually used that for some of our insurance clients. When they need a treatment that their plan doesn't cover, or need treatment before their plan goes into effect, we tell them how much it is going to cost them out of pocket, what this provider normally is reimbursed by Medicare for this procedure, etc. So, for example, we had a client who needed a basic procedure done before their policy took effect. The doctor was quoting them $2000 for

the procedure, but we were able to find that the average reimbursement that doctor had taken from Medicare for that exact procedure had only been about $100 per treatment. With that data the client was able to negotiate their bill down to about $500.

Stepping back, the fundamental problem with price transparency is that while everyone (hospitals, insurers, providers, etc.) would love to know what other organizations are reimbursing or getting reimbursed, they never want to share that data about themselves.

Pulse: *Given the hundreds if not thousands of players in the digital health space, what do you think separates the winners from the losers?*

George Kalogeropoulos: A big differentiator is focus. This is a more general entrepreneurial principle – that smaller companies should pick a specific performance metric and focus all their energy on maximizing that. There's a lot of things you can do in digital health that do not directly correlate to building a successful company. You can spend a lot of time going to conferences. You spend a lot of time doing market research or having very general "business development" conversations. At the end of the day, you have to pick your niche. You have to specialize. You have to set tangible goals, whether it's revenue, whether it's market share, etc. and focus very narrowly on maximizing those. It's such a gigantic space and there's so much interesting stuff going on but it's very distracting and quite easy to get lost.

You also need to have an attention to detail, especially in regards to following all of the rules and regulations. The digital health space is not social media; there are so many rules, so many overlapping and sometimes conflicting rules and regulations. As an example, within the health insurance space there are state and federal regulations in addition to the insurer contracts you have in place; at times, these actually conflict and contradict each other.

As with every entrepreneurial venture, you also have to be willing to make mistakes, because that is the best way to learn. Looking back at some of our projects, I cringe when I think about how naïve we were about the space. Sometimes we were emailing the completely wrong people about our wacky ideas and projects. For example, one of our early ideas (which we originally thought was more promising than HealthSherpa!) was to help ambulatory surgery centers market themselves. So we built a prototype and started emailing the head nurses of the ASCs asking about advertising which was totally out of their purview. But doing naive and stupid things like that and failing quickly is how you learn. By putting yourself out there and quickly making lots of dumb mistakes, you learn right away if you're pursuing the wrong project. It might be messy, but that discovery process, that kind of trial and error, is responsible for much of the successful innovation we've seen in both healthcare and tech in general.

Profile

George Kalogeropoulos
Cofounder of HealthSherpa, a private alternative to Healthcare.gov

George Kalogeropoulos is the cofounder of HealthSherpa, a private alternative to Healthcare.gov. HealthSherpa has enrolled over 100,000 Americans in affordable health insurance, and is backed by leading investors including Y Combinator, Andreessen Horowitz, Redpoint Ventures, Founders Fund and the Kapor Center for Social Impact. Prior to founding HealthSherpa, George cofounded RentMetrics, and before that, he worked in trading and portfolio construction at a large global macro hedge fund in Westport, CT. George is a graduate of Yale University and a native of Athens, Greece.

87 percent selected a plan with financial assistance compared to 80 percent in the early months of the first open enrollment period

Detailed findings for HealthCare.gov states through December 15, 2015:

More than 3.4 million people selected a plan through December 15 in the 37 states that are using the HealthCare.gov platform for 2015, including Oregon and Nevada. Of those:

- 33 percent were under 35 years of age compared to 29 percent in the early months of the first open enrollment period.

- Nearly 1 million consumers selected a plan in the three days leading up to December 15. That is almost one third (28 percent) of total plan selections from November 15 through December 15.

- Of the 3.4 million plan selections, 48 percent (1.6 million) reenrolled in a Marketplace plan and 52 percent (1.8 million) signed up for the first time.

14 State-based Marketplaces;
3 Federally-supported Marketplaces;
7 State-Partnership Marketplaces;
27 Federally-facilitated Marketplaces
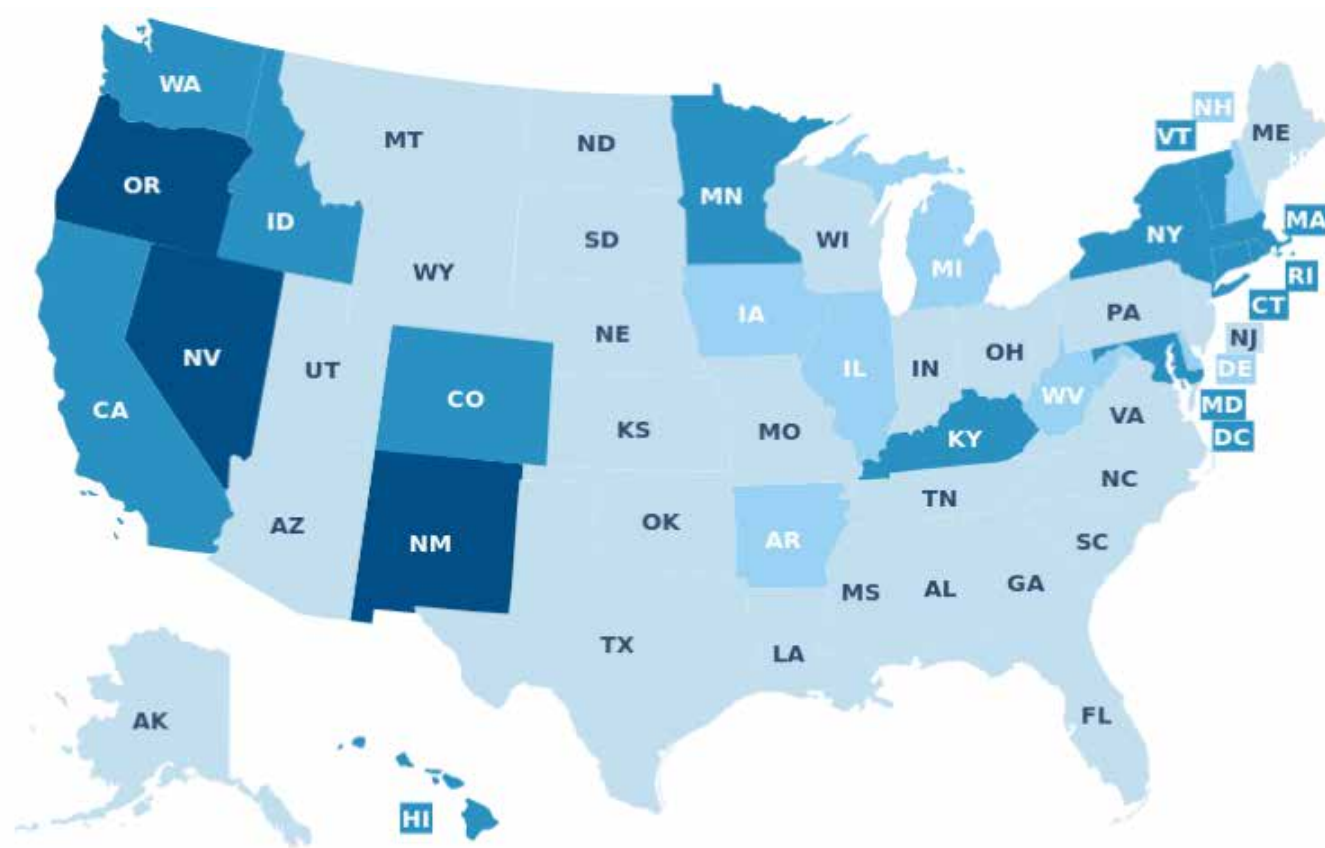
| Federally-facilitated Marketplace | State-Partnership Marketplace | State-based Marketplace | Federally-supported State-based Marketplace |

Coverage through the Marketplaces began in every state on January 1, 2014. The second open enrollment period runs from November 15, 2014 through February 15, 2015. Data as of November 2014.

For more information, see the Center for Consumer Information and Oversight (CCIIO) Health Insurance Marketplaces resources here.

Sources: Data compiled through review of state legislation and other Marketplace documents by the Kaiser Family Foundation.

The Provider
Transition to Value

An AMC's Path to Risk

An Interview with David Kirshner, Chief Financial Officer, University of Rochester Medical Center

By E. Brooks Riley

Despite the complex and ever changing legislative landscape, children's hospitals and large academic medical centers are beginning to find ways to take on innovative risk arrangements and new models of payment. The Pulse spoke with David Kirshner, the CFO at the University of Rochester Medical Center to get a deeper understanding of recent trends in hospital-based health care and innovative risk agreements.

Pulse: *You have recently left Valence Health to become the Chief Financial Officer of the University of Rochester Medical Center. Can you tell me a little bit more about your career and this new position?*

David Kirshner: I was the Chief Financial Officer at Boston Children's Hospital and I decided that after 15 years in really a fee-for-service dominated system that I wanted to

be educated about the potential alternative payment systems that might lie ahead for the health care industry. I had been really fortunate to be one of the people who benefited from the old fee-for-service system, but was increasingly worried that it was unsustainable. I had some very early experiences at Boston Children's Hospital around value-based payment models including bundled payments and pay-for-performance and a number of initiatives that got both the primary care

physicians and the specialists engaged in looking at ways to bend the cost curve.

The impetus for ultimately leaving the non-profit world and going to Valence Health came from a growth equity company that made a 30 million dollar investment in Valence Health to really bring it to the next level and capitalize on the current trends that we have seen which most people would describe as health care reform or Obama Care. Valence Health believes that Accountable Care Organizations (ACOs) are a perfect solution for the future, because providers increasingly need to be the entity that takes on the insurance risk. Geisinger Health System, Texas Children's Hospital and Scott & White Healthcare are models for how care delivery, insurance risk management and population management come together. Some of these organizations were clients at Valence so I was able to gain experience working with some of the most progressive organizations in the country who accept these alternative payment models.

Sure enough, I got a call from The University of Rochester Medical Center. What intrigued them was not only knowing that I had years of experience at an academic medical center, Boston Children's Hospital, but also that I understood this new payment system and all of the capabilities that you have to have to succeed under capitation or some form of shared-risk.

I came here and I fell in love with the organization.

Pulse: *Where does the University of Rochester Medical Center (URMC) stand in moving from a fee-for-service model towards value-based care and new models of risk-sharing?*

David Kirshner: Like most health care organizations in the

"Very rarely am I in CFO roundtable meetings where a majority of the room hasn't accepted the inevitable question around accepting some form of alternative payment model. The question is, is it a bundled payment or is it shared risk?"

country, URMC sponsored a clinically integrated network (CIN). By law, you can become a CIN and compliant with the FTC as long as you do two things: first, you must have a shared, common, financial interest so there must be some level of common risk and second, you have to actually improve quality. You cannot just contract like a bargaining agreement – you really must have mechanisms in place to share data and improve quality. Those two pieces are really fundamental to what URMC has done in creating a new entity called Accountable Health Partners (AHP) which is growing leaps and bounds, not just around its employed physicians but it is including community primary care physicians and asking them to become part of the network.

Pulse: *What challenges do medical centers such as URMC face when thinking about becoming a CIN, ACO or provider-sponsored health plan? Is it more difficult for a large academic medical center to move along this continuum when compared to a community health system?*

David Kirshner: For community hospitals with roughly 100 primary care physicians, a 250 bed hospital and specialists within the community, it is a natural transition to start an independent practice association that can evolve further into an organization with the capabilities required to collect and analyze the necessary data. This was the early wave of clinical integration that has taken place over the last 10 years amongst community physicians and small to medium sized community hospitals.

It is only now that large academic medical centers have become much more interested in these networks and the prospect of taking on risk. The reason that they are reluctant to do so is because they attract some of the sickest patients. By the nature of their missions, these organizations to take

care of the sickest of the sick; these patients are the most expensive, most complex, most resource consuming and most challenging. These stop-loss cases are risky.

People are beginning to see however, that it is inevitable that they will have to take on some of the risk. A lot of these organizations are hedging. They are continuing their fee-for-service business because they have to, but they will start to build innovative pilots or early contracts to share risk without much downside. Most academic medical centers are taking a very small part of their net revenue – only 1% to maybe 3% and experimenting with risk.

To use an analogy, I think of it like a water skier where one ski is fee-for-service and one ski is capitation. All health systems are unsure of how to balance and what direction they are headed in. You have to have a foot on both skis.

Pulse: *I have heard a lot of skepticism with regards to how quickly and to what extent health care will move along the value-based and risk spectrum that we are talking about. Do you see this skepticism or is it waning?*

David Kirshner: I think it is waning. Very rarely am I in CFO roundtable meetings where a majority of the room hasn't accepted the inevitable question around accepting some form of alternative payment model. The question is, is it a bundled payment or is it shared risk? There is still a lot of skepticism about how much risk any of these organizations can take on and how big of a patient network you need to make this feasible.

The vast majority of hospital CFOs in this country are making the initial investments necessary to ultimately enter this game particularly in the area of data analysis. Without the data, it is impossible to risk adjust properly.

Pulse: *What concerns still remain and where are people focusing their attention as they move forward?*

David Kirshner: Many people talk about the importance of the three Rs of health care reform.

The first R is for risk adjustment, which has really been very challenging. We don't have great systems for risk adjusting and predicting utilization. The sicker the patient, the greater the likelihood that you will lose money if you aren't risk adjusted properly – which gets back to the discussion about academic medical centers.

The second R is reinsurance, and the reason that is important is that catastrophic cases do occur. Reinsurance provides a protective outer layer.

The third R stands for risk corridors which represent the question of how much upside or downside risk you take. One of the ways to mitigate risk is to determine which corridor is appropriate so that you can take a little bit of upside and a little bit of downside to moderate how much risk you take on.

People are struggling with how to address these three Rs – how much risk to take on, how much to pay for reinsurance and what corridors to proceed down. I think everyone is trying to collect as much data as they can to help in these areas.

Pulse: *You have now worked extensively in pediatrics and across a spectrum of health care providers. Do you have any sense as to why children's hospitals have been slower to accept risk and move along the spectrum of value-based care? Is it due to fragmented state programs or the difficulty of assessing risk within the population in question?*

David Kirshner: Yes and yes. The state experiences are so different. What you would see in Texas and Ohio in terms of those states' willingness to share information, grant insurance licenses and give people the opportunity to take and accept financial risk is so different than what you would see if you were in Arkansas or South Carolina. It's not that you can't do it, it is just that the state has a lot to say about what it is trying to do from a budgetary perspective with Medicaid. Some Medicaid directors believe that alternative payment models for providers make a lot of sense and some are of the mind that it is simpler and easier to lay it off to an insurance company. Some states have succeeded and others haven't.

There is a competitive dynamic going on right now around the states.

I have to say that I think Texas has done such a tremendous job; they are very effective in how they are organized and I have to credit the providers for building the collaboration with the state. The children's hospitals in Texas almost all have health plans – Texas Children's Hospital, Driscoll Children's Hospital, Cook Children's, Children's Medical Center of Dallas – they are all trying to build health plans that are Medicaid-centric because the state promotes it and thinks that it is the best way to manage its budget.

In terms of risk assessment, there is really no perfect risk adjuster in pediatrics. If children's hospitals are going to take large scale risk, particularly around children with medical complexity, they need a good risk adjuster. What the Children's Hospital Association and companies like Valence have been trying to do is understand the trends among some of these populations.

Pulse: *You have been very involved with the Children's Hospital Association (CHA) and their legislative efforts with the ACE Kids Act can you tell me a bit more about the bill and its aims?*

David Kirshner: I had done some work with thought leaders around the country to discuss how to better take care of children with two or more medical conditions particularly in states that haven't allowed providers to take on risk and in the absence of federal legislation. Ultimately the CHA decided to sponsor the ACES Kids Act (HR 4930).

I spent a lot of time working on the business plan. The thought is that the best way to take care of children of medical complexity is to put them under a pre-paid system where you are allowed to do whatever you need to do to provide care. For example, you might want to use that funding to build a ramp in a child's home or you might want to do something else that is not currently paid for by fee-for-service medicine.

If it passes, then you will see a real difference in the way that we finance the care for these children. Just as a point of reference, 6% of the children in the United States account for 40% of the total cost of care.

Pulse: *Building on the breadth of your experiences. Are there lessons that academic medical centers can learn from children's hospitals and vice versa when thinking about the shifts fee-for service to value-based payment?*

David Kirshner: Often times, people think that Medicaid doesn't represent a large enough population and they are a terrible payer. But, when you are a children's hospital, it is a big part of your business, anywhere from 30-70%. Therefore, you don't have a choice but to master the skills required to approach Medicaid finances and managed care for the Medicaid population.

Often times pediatrics has lagged in accepting innovative payment models, but they have become much more innovative and are leading in many ways. Children's hospitals are a good beacon of what it is possible to do for the adult population. Yes, pediatrics is small, it represents only about 6-8% of the commercial insurance premium, but it is very clearly a microcosm of what is likely to happen in the adult world.

Profile

David A. Kirshner is Chief Financial Officer of the University of Rochester Medical Center. Prior to being appointed at URMC in January 2015, David served as Vice President of Corporate and Business Development for Valence Health, a provider of value-based care services and solutions for hospitals and health systems. He was also the founding Director and Senior CFO Consultant to Warbird Consulting Partners in Atlanta, which advises academic medical centers on research enterprise strategy, infrastructure, and business capabilities. Prior to that, David served for 15 years as the Chief Financial Officer of Boston Children's Hospital where he worked to improve credit ratings, develop institutional financial policies and governance to support research, and implement new financial information systems.

ACO models

Across the country, varying types of ACO and "at-risk" models are forming to serve the demands of communities.

Below are specific examples:

PCP Group

Home Health

Hospital

PCP Group

Specialty

Mental Health

Model #1

Specialty

Specialty

ACO

Model #2

Model #3

Mutli-Specialty

FQHC

Hospital

Envisioning the Clinical Workforce of the Future
Helping Patients Help Themselves

An Interview with Dr. Lisa Bielamowicz, Executive Director and Chief Medical Officer, The Advisory Board Company

For years, conventional wisdom has suggested that the U.S. is facing a significant clinician shortage. Many assumed that the mandates of healthcare reform and the push for greater value would only exacerbate this problem. Yet some progressive health systems that have managed to turn the dial on value are actually seeing a completely different picture. To learn more, The Pulse sat down with The Advisory Board Company's Chief Medical Officer, Dr. Lisa Bielamowicz, to discuss their research in this area and her thoughts on the clinical workforce of the future.

Pulse: *If, as many are predicting, the health care economy makes a fundamental shift from rewarding volume to rewarding value, it seems fair to assume there are going to be some significant changes in the volume and types of services provided to patients. How do you see service utilization patterns changing?*

Dr. Bielamowicz: If you assume that we are moving to a healthcare economy that is defined by value rather than volume, and providers in particular are taking risks for the total cost and quality of care delivered to a population, the types of services that patients receive will be somewhat different in kind. We would expect to see an increase in utilization of ambulatory and outpatient services over inpatient services.

The whole goal of population health should be to provide better care, particularly for chronic disease in the outpatient or primary care setting in order to substitute that lower cost outpatient care and keep patients out of high-cost care environments due to acute care flare-ups, like the emergency department and inpatient admissions. So, if we are good at care management we should be doing more for the most complex patients outside of the hospital, more disease management, more primary care visits, and hopefully see a decrease in ED admissions and admission to the hospital for chronic disease.

We did some work last year at The Advisory Board examining organizations who had been operating under the financial and care models that are the backbone of population health for many years now, to see how utilization of services was

different, compared to fee for service markets. And it was quite interesting to see that not only did we see an increase in these kinds of preventative services, but we also saw a decrease in utilization of things like specialist services.

One would only assume that primary care physicians were doing more of the management and work within their own offices, and needing fewer specialists. We also saw fewer intensive high-cost procedures; things like surgery for back pain for instance, were more likely to be managed in an outpatient setting using physical therapy and medical management.

So, if the country were to move in the direction that the nation's best population managers like Kaiser and Group Health have, you could expect a decrease in those services.

Pulse: *How are these changes in service utilization likely to change the makeup of the clinical workforce?*

Dr. Bielamowicz: Well, I think it's easiest to answer that question in two parts; the first is to take the physician question. If you look at markets with aggressive care management and compare them to loosely managed fee-for-service environments, what we found is that physician supply needs for a large number of specialties go down by anywhere between 20 and 35 percent. Some of this has to do with a direct decrease in the utilization of services, some of this has to do with how population health management organizations are utilizing different providers to deliver parts of care that specialists might deliver today.

We all operate under this axiom that there's going to be a significant shortage of physicians within the next 10 years. What our model shows is that we might be able to ameliorate at least some of this shortage just by delivering care in a

"I don't care if you're a man or a woman who's a recent medical school or residency grad, most new physicians do not want the same kind of responsibility and job intensity that physicians of a generation ago did."

different way. Of course this is just a model, a projection, there are lots of variables and caveats if you want to apply this data to any market that you're working in.

If you look at care delivery beyond the physician we are seeing a huge transfer of low level care from physicians to alternative providers like nurses, advanced practitioners like NPs, and physician's assistants. So there's a huge expansion in demand for those mid-level providers as well as the RN workforce, particularly in the ambulatory environment.

If we're going to transfer work from doctors to others, we need to make sure that those providers are working at the top of their license. When we look at the everyday jobs of advanced practitioners and RNs, we often find that, particularly in the ambulatory setting, they're spending a significant amount of time doing tasks for which they are overqualified. When we think about constructing the care team of the future, we need to make sure that we are restructuring job tasks so that everyone is working at the top of their license.

In summary, as we expand the reach and reduce the cost of care we're going to see more work transferred from physicians to advanced practitioners and greater roles for lower-level members of the care team; medical assistants, nonclinical workers, and community health workers.

Pulse: *As clinicians shift into new roles and practice patterns, they're going to have to develop new skillsets. Which new skills will be most important for clinicians to develop in a value-based care environment?*

Dr. Bielamowicz: Bringing elements of team-based care and management into physician training is going to be critical. Physicians are largely trained to be very successful lone wolf providers of care, which is understandable. It's very important

that you as a physician are able to make that critical decision in the middle of the night when you are there alone in the ICU. It is a very big shift in operations and control to handoff things that you have always done to someone else on the care team who may not be trained at the same level that you are.

At the same time, other members of the healthcare team are going to need more training so they can shoulder greater responsibility. Critical thinking skills in particular are going to be very important for nurses and advanced practitioners as well as more exposure to o be able to evolve at the pace that we need it to. At most academic medical systems healthcare education tends to be the most complex and byzantine part of the organization. It doesn't change quickly.

Pulse: *How might health care reform, and the broader shift from volume to value impact the traditional physician practice model? Already we've seen an uptick in practice consolidation and physician employment. Is this likely to accelerate?*

Dr. Bielamowicz: We are seeing those changes independent of anything having to do with healthcare reform in population health. A lot of it just has to do with demographics. There are more women entering into the field of medicine now than men, but I don't care if you're a man or a woman who's a recent medical school or residency grad, most new physicians do not want the same kind of responsibility and job intensity that physicians of a generation ago did.

The economics of a small practice are also getting much more difficult to maintain. Never in 30 years have we seen independent small practitioners feel more concerned about their ability to maintain a solvent independent practice. It's not just the fact that reimbursement is getting pressured, the cost of running a practice is also going up – the IT requirements, because of things like meaningful use, the requirements to provide more comprehensive care to patients, all of these things require investment in infrastructure that often times small physician practices don't have.

So, we are seeing consolidation for a lot of reasons, whether it is physicians aggregating into much larger single specialty or multispecialty groups, or the upswing in health system employment of physicians that has been increasing for the past 10 to 15 years.

Pulse: *How might these two trends of practice consolidation and physician employment impact the traditional relationship between hospitals and physicians? Will we see a meaningful increase in hospital-physician alignment?*

Dr. Bielamowicz: Without doubt, close hospital-physician alignment is going to be critical if you want to deliver effective population health-type care. Historically there's always been a limit to how deeply hospitals and physicians could work together outside of employment because of the regulatory environment and it's still difficult for hospitals to provide independent physicians with care management and IT resources that could help them more effectively coordinate care.

There are ways around the regulatory roadblocks. Some health systems have been successful building alignment with non-employed physicians through innovative models such as clinical integration, which allows health systems to work under safe-harbors that have been defined by regulators. But while it is possible, creating the kind of deep linkages necessary to succeed in population health with independent physicians is not going to be easy.

Over time we might see those regulatory barriers change, but in the environment in which physicians are practicing today I do think we're going to see a continued upswing in direct employment.

That having been said, we've seen over and over again that just because a hospital delivers a check to a physician does mean that they are any more aligned than the independent physician down the street. It's not just an issue of health systems taking over physicians, that's by no means what sets a system up for success. What we actually see is a little bit of the opposite, more and more physician leaders being integrated into the highest levels of health system management and operations.

This brings us back to what we were talking about before, an imperative to make sure that we have physicians with those business and management skills under their belts to be able to fill the new roles for physician leaders.

Profile

Dr.Lisa Bielamowicz
Advisory Board's Chief Medical Officer

Dr.Lisa Bielamowicz is the Advisory Board's Chief Medical Officer and leading expert on physician strategy, serving as a strategic adviser to executives from the nation's largest health systems and medical groups. An author of more than 20 publications, Dr. Bielamowicz is also a nationally recognized speaker and industry expert. She has received numerous academic and professional awards, and was chosen as the 2001 Michael E. DeBakey medical scholar. As a Howard Hughes fellow, she researched memory and learning using functional MRI at the National Institute of Mental Health, resulting in several publications in peer-reviewed scientific journals and presentations at international meetings. Dr. Bielamowicz trained in diagnostic radiology at Johns Hopkins Hospital. She holds a Bachelor of Science from Rice University and received her M.D. from Baylor College of Medicine with highest honors, graduating first in her class.

Leading Across the Chasm

An Interview with Grace Terrell, CEO of Cornerstone Health Care

By Bernie Zipprich

Grace Terrell MD serves as CEO and President of Cornerstone Health Care, a multispecialty physician group headquartered in High Point, North Carolina. In 2010, Cornerstone embarked on an ambitious transformation of their approach to care delivery. The journey since then has been anything but easy – yet as the organization enters its fourth year of change, prospects are looking bright.

Pulse: *Dr. Terrell, tell us about Cornerstone Health Care. How big is the organization today? And what made the leadership team decide to embark on the journey from volume to value?*

Dr. Terrell: Cornerstone spans a 12-county, 200 mile radius featuring six health systems. I guess the short version of it is that we've been a very successful traditional multi-specialty medical practice in the fee-for-service world. And like everybody else, we've seen the world change. So we really

started to pay attention to how we might adapt to that. As early as 2005-08, we started running our practices seven days a week and adopting electronic medical records and doing some of the medical home stuff. But essentially we decided that that was not going to be an adequate response to the market or where we thought healthcare should go. And so in 2010, we really started looking for capital partners and people that could help us put our strategy together—one that was based on becoming a population health management hub and investing in care model transformation and information integration. And so over the course of 2012 and '13, we borrowed about $25 million. The doctors signed personal guarantees for the last $8 million of that so that we could actually start the investment to do all this. And started putting it in place.

Pulse: *So you were reading the tea leaves in the market which convinced you the world was changing. What specifically did the leadership team see that made them convinced that moving to a value-based footing was the direction to go?*

Dr. Terrell: Well, we talked about a couple of things. One was our "default future," the default future being what will happen if we just sit here and do nothing. ... We recognized that eventually the large health systems in our area will acquire us, and we didn't think that in the long run, that that will necessarily be the center for where patient care could or should go.

We were looking at demographics and looking at some of the opportunities that came out of the Affordable Care and HITECH acts, and basically saying, well, if we fail, we still have the same default future which is we get acquired by one of these systems. But if we succeed, we could really position ourselves in the market to be ahead of the rest of them.

So you know, our feeling and belief is that regardless of what's happening in Washington, the train has left the station, and that we are in a position to be successful far more quickly than some of the ones that have decided just to play in the fee-for-service world awhile longer.

Pulse: *When the leadership team announced that it wanted to move in this direction, did you encounter a lot of resistance from within the organization? How did you navigate that?*

Dr. Terrell: The shareholders [Cornerstone's physicians], of course, all had to vote for it. Eighty-five percent had to literally vote to borrow the money in October of 2011. So we had to do a lot of education of our shareholders about what we were doing and what the risks were, what the opportunities were.

And you know, some of them seemed to have forgotten all that recently, when we had to make some financial sacrifices. For two years we were able to give fairly good income support, so they didn't feel the risk. But we did not have enough return on investment by this past year, so we ended up with about a 10-15 percent reduction in their comp. So there's actually been more anxiety recently than there was back then.

Pulse: *Wow, a 10-15 percent reduction is a real sacrifice. How have you been able to hold the staff and shareholders together for such a difficult journey? What's been effective?*

Dr. Terrell: Most of the time, at this point, it's about emphasizing that it's the right thing to do – it's the right way of practicing medicine. We're ahead of the journey. Everybody else is going to have to go through this. So we're in better position to be successful and we've already been through the pain. And for those that are staying with us – which is the vast majority of our physicians – that's really been a message that's resonated with them.

Pulse: *At the heart of the transformation you've been undertaking are new, more prevention-oriented models of care. How are physicians and patients responding to them? And to what extent is being able to practice medicine in this new way part of what's held most of your physicians together?*

Dr. Terrell: For those physicians that are in these new care models, they totally get it, and the patients love it, too. That's the other side of it: our patient satisfaction survey results since

we've gone to this are somewhere around the 90th percentile of satisfaction and they've stayed there.

Pulse: *Tells us about the new care models. What do they entail and how are they different from how Cornerstone used to practice medicine?*

Dr. Terrell: If you know the way most of healthcare is organized, it's around these incremental units and episodes of care – the 15-minute office visits. And it's very centered on physician profits and visits or procedures or ancillaries. What we did is we basically said, let's start with those patients who are the highest cost; if we redesigned care in ways that are centered around their needs rather than around the tyranny of the 15-minute office visit, we could actually improve their care and lower the global costs.

So we would meet with clinicians in specialties that were high-impact and would use about an eight to 12-week period of time to evaluate, quantify, and design programs around it. For example, in the heart failure clinic, we embedded behavioral health, pharmacy, and social services. In our polychronic clinic, it's team-based with nurse navigators. In the dual eligible clinic, we have a psychiatrist that is embedded in the overall practice because those patients have so many behavioral and significant psychiatric challenges. In the oncology clinic, we put an internist [on the care team] because often other healthcare needs get overlooked which leads to fragmentation of care.

In addition, we looked at access issues – a lot of the offices are now open until 9:00 at night, and we developed a relationship with Fast Med Urgent Care for places where that's not feasible.

Next, we're looking at the COPD care model in which respiratory therapists are embedded in the in-home visits and whatnot. And, gosh, we got several other projects going

"We're ahead of the journey. Everybody else is going to have to go through this. So we're in better position to be successful and we've already been through the pain."

on. ... You know, we learn and we tweak, and we reiterate and change, and it's been a good thing.

Pulse: *As you're developing these new care models, have you had to change the types of people that you recruit or change how you train?*

Dr. Terrell: Yeah, we have. ... We have a focus on people with high social skills and customer service training.

Pulse: *That's great. What types of results have you been seeing in terms of clinical improvement and cost savings?*

Dr. Terrell: Of the quality measures that we have in all our contracts, we have had steady improvement since we've started. Now, of course, these are just process measures rather than outcomes measures. [When it came to Medicare Shared Savings,] we did not get shared savings. We didn't realize we were already so much lower cost than our benchmark, that even though we were low cost in the nation, it was hard for us to make a significant further dip. But we were in the top 20 in terms of quality results in the nation among all the ACOs this past year. And if you look at where our doctors started and what the mean was when we started, and 13 months later, every single one of our providers is now above what the mean was back then.

Pulse: *I would imagine achieving this level of quality improvement required considerable cultural change for your practitioners. Can you speak to how you've managed that?*

Dr. Terrell: There's been a ton of culture change and most of it's been led by physician champions. ... We started a patient advisory council so we could get deep into understanding where we were and weren't meeting the needs of the patients. And so there's been a lot of that. You know, I can't do culture change. It has to be everybody.

Right now we do have stresses on the organization from the financial challenges we've been under. Not everybody is [on board], because they thought it was going to be easy. But by and large, we've got a significant buy-in that this is the right way of doing things, and people get it.

Pulse: *Dr. Terrell, when people talk about transforming form volume to value, they also talk about the challenge of "crossing the chasm" – the challenge of navigating the financial stress that comes with moving from one business model to the other. How did you plan for that ahead of time?*

Dr. Terrell: Well, we felt like that the only way that we could do this was to burn all the bridges. Nobody could go back. And that's what we did. We did that through leveraging ourselves financially so that we would have the ability to actually put in place what we needed to. ... A lot of folks want to hedge their bets and sort of say, "Well, I know it's coming, but I'm just going to wait and let somebody else be the pioneer in that." But we believe that this may well be the first mover that's in the best position. ... It's going to be really hard to be the second or third low-cost provider in the market.. So our strategy was to play offense.

Now, it was easier for us to do that than probably a large health system with large [fixed costs]. But it's still been very, very hard.

Pulse: *Financially, what made it so hard? Was it payers? Investors?*

Dr. Terrell: Part of it was it took too long to get the contracts in place. We probably mistimed some of our investments [as a result]. For example, we probably spent too much up front on IT because the market didn't have mature products. You know, it was hard to know that at that time. We just had to move forward. And so it was execution, really, that was the biggest difficulty to manage.

We finally got some of the payers to understand that they needed to do this with us. But they were not any more ready for this than anybody else. They were still claims factories – a lot of them talk the talk but don't walk the walk. That's not true across the board. Some of them certainly have been good partners.

And you know, there [was] not a lot interest from investors in this. Now that we're where we are, we've been able to refinance and everybody loves us. ... But you know, at the time, it was really, really hard to get the capital markets to pay us any attention. So we just sort of said, "okay, we're going to just do this."

Pulse: *Dr. Terrell, when other organizations ask for your advice on moving from volume to value, what do you tell them?*

Dr. Terrell: Well, it depends on where they're positioned – if they're part of a physician group or part of a health system. If they're part of a health system, the difficulty they're going to have is executives who are still seeing hospitals as a profit center as opposed to an expense. ... They're not looking at the total percent of premium and how big that overall pot of money is. And so everybody looks at healthcare from their own little tiny perspective. But if you look at it from the overall cost of care, there's a lot of opportunity. But even the most sophisticated financial folks don't see through that very effectively if their job all these years has been to make sure the hospital stays afloat or whatever.

Pulse: *Looking ahead 18 to 36 months from now, where would like Cornerstone to be?*

Dr. Terrell: I would like 18 months from now for us to have solid earning return on investment from these risk contracts. ... I would like for Cornerstone to continue to be an innovation lab and continue to develop new and improved care models. I would also like to be very focused on starting to look at the next wave of products on the insurance market. Because we've got some of our employers directly who would like to be on [private] exchanges and I'd like to know what that looks like.

I'm also very interested in what's going on in the Medicaid

Dr. Terrell: So High Point is a distressed community. It was a typical textile and furniture manufacturing community, and most of that went over to Asia and China a decade ago. And although the entire Triad Region [the area around High Point] is starting to remake itself as a logistics, service and distribution economy, in the meantime we've got some real transitions to go through.

So I really think that the more we go along, if the cost of care is lower and the premiums for the employers are lower, there's a real business development opportunity for those who are trying to cut down their own cost of doing business [and want to locate in the region].

space in North Carolina... we think there's opportunity there as well depending on what happens down in Raleigh.

Pulse: *Dr. Terrell, as a final question, can you speak to the potential impact of the changes you're making at Cornerstone on High Point and the broader community?*

Profile

Grace Emerson Terrell, MD, MMM, FACP, FACPE
Chief Executive Officer and President of Cornerstone Health Care, P.A.

Dr. Grace Terrell has been the Chief Executive Officer and President of Cornerstone Health Care, P.A. since 2000. Cornerstone is a multi-specialty medical group with over 85 locations in the Piedmont Triad region of North Carolina. In her role, Dr. Terrell has overseen the growth and transformation of Cornerstone as an innovative physician-led medical community.

Dr. Terrell is a national and local leader in health care initiatives and reform. She is a Trustee for the Certifying Commission for Health Information Technology. She has served the American College of Physician Executives as a Board member and on multiple task forces. Currently, she is on the Advisory Board for the Oliver Wyman Health Innovation Center. She is a member of the American Medical Association Innovators Committee and serves on the Towards Accountable Care Consortium for the North Carolina Medical Society. She is also the co-author of MD 2.0: Physician Leadership for the Information Age, which was published in the spring of 2012.

Her volunteer services include the United Way of Greater High Point both as a Board member and previous Board Chairman. She is also on the Board of Directors for the High Point Chamber of Commerce and the North Carolina Shakespeare Festival.

Dr. Terrell completed her undergraduate degree at the University of North Carolina at Chapel Hill, where she was a Morehead Scholar. She received her medical degree from Duke University in 1989 and completed her residency training in internal medicine at N.C. Baptist Hospital in 1993. In 2000, she received a Master's in Medical Management from Carnegie Mellon University.

While individual settings or programs may appear unprofitable, overall profit under the risk agreement is the ultimate consideration.

Source: Mckesson

Innovation in
Digital Health
Technology

Innovation in Provider Communication and Information Exchange

Interview with Justin Spencer, CFO of Vocera Communications

By Pat Purdy

With the introduction of the hands-free, instant communication badge, Vocera Communications changed the way physicians, nurses, and other providers exchange information. This revolution has led to improved patient care and increased the productivity of hospital staff.

Pulse: *What is the role of hospital communication?*

Justin Spencer: It plays an absolutely vital role. We believe that a lack of or failures in the hospital communication system contributes to death. In fact, we believe it's the number three killer in the United States behind cancer and heart disease.

Pulse: *Vocera's care coordination offering has a number of different products, including badges, Collaboration Suite, Care Experience Suite, and alarm management. How would you characterize the major functionalities of the offerings?*

Justin Spencer: At the core, we provide communications solutions that enable and improve the overall patient safety and experience initially within the hospital environment. As the delivery of care becomes increasingly distributed outside the walls of the hospital, we're extending our reach to those expanded areas, whether it is physician's offices, outpatient centers, field nursing centers, and even the home.

Our company was founded on a primary solution which is a product that we call the Badge. It's a hands-free communication device that enables physicians, nurses, and other healthcare professionals inside of the hospital to communicate very quickly based on their roles and defined workflows.

Also, in the last year, we expanded our product reach to address the emerging need for secure messaging. One of the major challenges in the healthcare environment is the use of texting as an important vehicle for communication, but most nurses and physicians are communicating with open, unsecure texting. To address this, hospitals are aggressively exploring solutions to implement and deploy secure

"The heart of what we do is improving hospital communication so that providers can avoid very significant and severe events that take place in the hospital. We've found that as nurses and physicians collaborate better, the overall patient experience improves."

collaboration or secure messaging. In addition to in-hospital messaging, we have also acquired technology that enables us to extend secure messaging outside the walls of the hospital.

Lastly, we recently launched a product to address alarm fatigue inside of hospitals. This enables providers to prioritize and set policies that enable critical alarms to be highlighted and dealt with appropriately, keeping the hospital in compliance with regulatory mandate or mandated initiative.

Pulse: *What are the technology trends that you see hospital administers focusing on now, and how does Vocera help administrators align with those goals?*

Justin Spencer: The major investment that hospitals have been making is around the electronic health records (EHRs) to improve the patient records and the way that that information gets into the hands of physicians and nurses. While these deployments have enabled the data to be made available, we are seeing EHRs fall short. Providers have struggled to get the benefit out of these systems, which are not user-friendly.

They're not able to get and share information to collaborate with each other as they would like. And so that's where we see a huge opportunity for Vocera to step in and be able to enable those electronic health records and those systems to come alive and to be able to be the communications platform that distributes and enables the data that resides in those systems to be put in the hands of the right people at the right time.

For example, Epic has a mobile application called Haiku. It's an app that a physician or a nurse would have on their device where they could pull up a patient record. The problem is if they want to communicate or send information securely to

a colleague in a different area of the hospital or a different part of the healthcare system, it's very difficult for them to do that. So we have integrated our mobile app into the Haiku app. So if a doctor has the Epic Haiku app, they can place a phone call directly from the Haiku app instead of having to look up that contact information. Or they can actually send a secure message from their Haiku app using our collaboration suite.

So, we're increasingly finding ourselves integrating more deeply with the EHR companies – Epic, Cerner, and Allscripts.

Pulse: *What are the primary drivers for hospital administrators investing in hospital communication?*

Justin Spencer: While our primary solution – the Badge – is designed to ultimately improve patient safety and experience, we've been able to quantify ROI through improved productivity among nurses and doctors. One of the areas where our solution is commonly deployed is the operating room. Measuring the through-put (the turnaround time for an operating room to be prepped after one surgery and transitioning to the next), we found that with our solution we were able to get in one additional surgery per day. That translates to several hundred thousand dollars of incremental revenue per year. So Vocera has a distinct benefit in improving the productivity of the workforce, which leads to improved financial performance.

The heart of what we do is improving hospital communication so that providers can avoid very significant and severe events that take place in the hospital. We've found that as nurses and physicians collaborate better, the overall patient experience improves.

One additional solution that we have is a product that is going after the quality of experience – the Care Experience – base. One of the things that hospitals get dinged for is patient readmission. A root cause is when patients either don't understand, forget, or ignore the discharge instructions that they received from their nurse and/or their physician. We have a solution that is called Good To Go. With this product, a hospital nurse is able to record the discharge instructions and then the patient or family member, instead of taking a whole pile of papers home, can log into the Vocera Care Experience portal and listen to the recording of those discharge instructions from their nurse or physician. This enables the hospital to reduce the number of times where a patient doesn't follow instructions, reducing the risk of early readmission.

Patient experience is a major driver. We're seeing hospitals hiring chief experience officers, the CXO, whose primary focus is to ensure that the quality of the experience at the hospital is at the highest level possible. A big part of that is the penalty associated with Medicare reimbursement, which is partially judged by patient satisfaction. Another driver is that the whole healthcare system is being turned upside down and, over time, it's becoming more of a consumer-driven service and delivery. This means that hospitals are having to compete for patient dollars. With patients having more choice than ever before, administrators realize that the quality of the patient experience has a huge impact on consumer choice.

Pulse: *What has been the pace of adoption of hospital communication devices?*

Justin Spencer: At this point, most every hospital has some form of a communication solution. There are a lot of hospitals that still have paging systems. Another alternative is an in-building wireless phone, from the likes of Cisco, Ascom, or SpectraLink. And then there's Vocera solution. And there's no one else that has a product like ours, so we tend to compete against those other two categories, whether it's legacy paging or in-building wireless.

At Vocera, we believe there are about ~7,000 hospitals in the United States and we are in just over 800 of them.

Pulse: *How are you seeing providers utilizing the array of device options? That is, are they continuing to use pagers, wireless phones, and smart phones with unique software?*

Justin Spencer: All of those solutions are definitely being used. The paging systems, particularly amongst smaller hospitals that don't have a capital budget that larger systems do, is often times in place. The in-building wireless phones are also commonly used.

The problem with those devices is they require hands to use. Vocera tends to be successful at selling into places like the operating room, the emergency room, the cancer unit – places where a truly hands-free, efficient workflow is valued and important.

The in-building wireless phone enables you to pick up the phone and call somebody. If you need to connect and don't know the name of the nurse in room 102, you can say, "Call nurse in room 102," and our software connects the person with that particular nurse. That's one example of the difference that we're able to deliver in the market, versus these in-building wireless phones and certainly the paging systems.

Pulse: *So do you see convergence of capabilities across these devices?*

Justin Spencer: Yes, we do. In fact, the Badge solution – which is a voice-only solution – is converging with the Collaboration Suite – an integrated voice and messaging solution for your smart phone. This combines the functionality of the hands-free Badge into the smartphone app, but it also gives you the ability to send messages and share information securely.

We're actively selling that product. It's one of our newer products and we're very pleased with the momentum there. But there will continue to be many many use cases where just the hands-free nature of the Badge is vital. As I mentioned earlier, in an operating room where you don't want your nurses fumbling around with a smart phone requires a truly hands-free device. So we believe there will always be – at least for the next several years – a role for the hands-free voice-only communication.

What is changing is that doctors, nurses, and other healthcare professionals are increasingly wanting an ability to quickly communicate with one another via their smart phone. A lot of hospitals now are struggling with whether they allow their employees to bring their own devices or whether the hospital provides these devices for their employees to be used in the hospital environment.

Pulse: *Vocera revolutionized the healthcare landscape through the development of the hands-free Badge. How do you see Vocera continuing to innovate and planning for the future of hospital communication?*

Justin Spencer: At this time, we continue to see more opportunity within the area of hands-free voice as well as integrating more deeply with EHRs and other clinical systems.

We also are heavily investing in newer technologies that bring voice and data together. I mentioned Collaboration Suite, which is the integrated voice and messaging platform that we have. That solution is predominantly for workers that reside within the walls of the hospital.

But we see a huge opportunity to expand our reach outside of the walls of the hospital. This enables critical patient data to get into the hands of a physician who might be working from home, their office, the outpatient surgical center, or a skilled nursing home. These are all areas or touch points where we are investing in a platform that enables communication to be spread and distributed across those environments.

We also have invested in the area of alarm management, addressing a major problem that hospitals are really struggling with around alarm fatigue. Additionally, as mobilization increases, I believe there's a need for physicians and the nurses to communicate with one another inside and outside the hospital. To this end, we're trying to deploy the communications infrastructure that's going to enable that collaboration to take place.

Profile

Justin Spencer
Executive Vice President and CFO of Vocera

Justin Spencer has been executive vice president and CFO of Vocera since August 2014 and has a proven track record of excelling in technology companies with both hardware and software products, and building trusted partnerships with board of directors, sell-side analysts, and investors.

Prior to joining Vocera, from September 2008 to November 2013, he served as CFO and executive vice president of finance and administration for five years at Symmetricom Inc., (NASDAQ: SYMM) where he led finance, investor relations, legal and information technology activities with teams located in the United States, Europe and Asia Pacific.

Mr. Spencer earned a bachelor's degree in accounting from The University of Utah and a master's degree from The Wharton School of Business.

PHYSICIAN USE OF MOBILE TECHNOLOGY

DOCTORS ♥ TABLETS

250% MORE LIKELY TO OWN A TABLET THAN ANY OTHER CONSUMERS

66%
USE TABLETS FOR MEDICAL PURPOSES

MORE THAN HALF
FIND THEY EXPEDITE DECISION MAKING

40%
REPORT MOBILE DEVICES DECREASE TIME SPENT ON ADMINISTRATION

U.S. PHYSICIAN SMARTPHONE ADOPTION

IN 2012
85%
OF U.S. PHYSICIANS OWNED OR USED ANY SMARTPHONE PROFESSIONALLY

ONLINE PATIENT–PHYSICIAN COMMUNICATION

39% of U.S. physicians communicate online with patients via email, secure messaging system, instant messaging, or online videoconferencing

86% of clinicians—doctors, nurses, and nurse practitioners—now use smartphones in their practice areas every day, up from 78 percent in 2012

53% of all clinicians use tablets daily, up from 34 percent in 2012

1 BILLION

visits to physicians' offices were made by Americans in 2011

There are more than
10,000
medical/healthcare apps
available in Apple's iTunes App Store

It's the third-fastest growing app category for both iPhone and Android phones

78% of U.S. consumers are interested in m-health solutions

56% of doctors who use mobile devices say they expedite decision making

40% say they decrease time spent on administration

Only **28%** of smartphone users and **18%** of tablet users describe themselves as "very satisfied" with the quality of medical apps currently available

~85% of doctors use smartphones and medical apps

88% of doctors would like their patients to monitor their health at home, particularly their weight, blood sugar, and vital signs

PATIENT USE OF MOBILE TECHNOLOGY

13% have accessed, stored, or transmitted personal health information or records in the past year
48% are interested in doing so

52% say they would like access to tools or websites that enable them to review quality rankings, satisfaction rankings, and patient reviews for specific doctors and hospitals

52% are comfortable in consulting with their physician through a video connection

Designing the Medical Record of the Future

An Interview with Mary Kate Foley, VP of User Experience, athenahealth

By Matt Nix

Most U.S. physicians have now adopted electronic health records (EHRs), and with the switch from paper to digital records comes the hope for a more functional, connected health care system. The Pulse spoke with Mary Kate Foley, VP of User Experience at athenahealth, to understand how she approaches EHR design and to learn where EHRs go from here.

Pulse: *At athenahealth, how do you approach design?*

Mary Kate Foley: I think that's a really good question to ask when you're anywhere near health care, because in many ways health care is coming late to human-centered design and research. At athenahealth, I look at all the initiatives that we're working on and I do a quick analysis on whether or not we are going to have to change or align with human behavior to meet each performance goal. At its core, human-centered design and research is all about human cognition, human perception, and human behavior.

It's not just understanding what software the target user is using. You really need to understand what gets them up in the morning, what their goals are in this interaction or workflow, what their motivations are, and, no matter what their goals are, what might be good enough for them in the heat of the day.

I've done a lot of work in e-commerce, and that's really tough because any one individual can take it or leave it. You don't have to buy that garden tool on Amazon. But when we go into a

health system and act as the fly on the wall, observing, we see so much incredibly impressive collaborative work. We have to understand our users - their cognition, perception, behavior - but we also have to understand that the behavior enacts itself in a collaborative way. So it's great that I really understand different types of physicians, physician assistants, and nurse practitioners, but none of them work alone. There are medical staff, front desk receptionists, and the patient taking on more and more responsibility. There are lab techs, the phlebotomist, and so on.

That's why I always start by identifying who the people are who are going to be using this service, if there is there a behavior change that we're hoping to enact here, and if we are trying to put in place a force multiplier for an existing behavior. Once I have figured that out, then I understand where we want to put our effort.

Once we understand the user, it's very important that we leverage the position the design organization is in as part of R&D. I've worked more in design and research than I care to go on the record about, and a fairly typical mistake I've seen

in organizations is letting user experience become a boutique function. We have resisted that utterly here at athenahealth, and that's one of the things I love the most about working at athenahealth. User experience is not a boutique function. We're in the middle of the fray. We're expected to understand the business problem, not just pick colors. And we work hand-in-glove with our product folks and our developers to solve these business problems. That is another key approach for making this work at any company, but it's especially important in health care, where everything is so complex.

Pulse: *What's different about design in health care?*

Mary Kate Foley: There's a humility that's important when I think about how to understand our users and the work that they do. In e-commerce, I can work with half a dozen personas and feel like I generally understand buying behavior and conversions for KPIs.

But now consider a pediatrician, for example. You can have a pediatrician in a two-doctor practice, a pediatrician in an emergency department, a pediatrician in a twenty-doctor practice, and a pediatrician rounding at the hospital with newborn babies, to name just a few. Their behavior is so particular to the situation. So for me to come in and just say "I've studied pediatricians and I get pediatricians." - really? When is the last time I saw a pediatrician in this particular situation?

And once you understand the collaborative work that gets done in a single practice or in a hospital system, you take that collaborative work and you further connect it across settings through the networked, interoperable health care backbone

"Unlike other systems I've designed for, the situational variability on what is the most important piece of information is very high in health care records. In designing for EHRs, the designer needs to step back and say, "Am I helping the health care professional find the needle in the haystack, or am I just building a better-looking haystack?"

we should all be aiming for. If that doesn't make you check your hubris at the door, I don't know what will.

Pulse: *What have been some of the biggest challenges in designing athenahealth's electronic health record?*

Mary Kate Foley: Some of the biggest challenges have to do with the concept of the EHR itself, and the expectations for EHRs that have built up over time. The expectation has been that the way to better care is to collect as much data as possible. This was an overreaction to a big problem with paper charts: when a patient's paper chart is in one office, you and a colleague can't get to that chart if you happen to be working in another office that day. You can't access that information in a timely manner. And once we digitize the data from a paper chart, there are many things that we could suddenly start measuring and tracking once that information is not locked up in paper. This led to EHRs becoming a place where every piece of data needed to be collected - because you can. And once you can collect that data, each party involved - providers, patients, payers, billers, lawyers - wants you to collect that data every time.

But what happens when you collect that data? Say that EHRs give you an opportunity to specify the severity of a sore throat on a five-point scale. Could the CDC collect that data and graph severity of sore throats over the past fifteen years? They probably could, but I don't think that would be at the top of their list. They would want to start with the leading and lagging indicators for the big health problems facing our society, like weight, A1C, cholesterol, and vaccination rates. But could the severity of sore throat suddenly become important? Absolutely. Unlike other systems I've designed for, the situational variability on what is the most important

piece of information is very high in health care records. In designing for EHRs, the designer needs to step back and say, "Am I helping the health care professional find the needle in the haystack, or am I just building a better-looking haystack?" One of our guiding principles in designing our EHR is that we must be illuminating the big picture.

Another one of our guiding principle is to think of the EHR not as a way to move through a data store, but instead as a way to facilitate communication. A doctor could be documenting to communicate to a staff member, helping that provider do the right thing on following a care plan. Or a doctor is communicating to her future self, and wants to document a quick one-phrase reminder of what happened that day. Or the doctor is documenting to communicate with the patient, helping the patient find a specialist. What if the EHR could give the doctor a list of relevant specialists, put those specialists on a map, and give the doctor and the patient an easy way to find the most convenient specialist to the patient's work or home? We need to get the experience to a place of enabling communication instead of thinking about it as feeding the database.

We all have our personal stories about health care. One of mine is about my husband. Just a few years ago, my husband was having some migraines. He asked his PCP, and she sent him to a specialist where the specialist ordered an MRI. He didn't hear back from the specialist - although he didn't proactively reach out for bad news - and the next time he's at his PCP she looked the report from the specialist over and said that everything's fine. Three years later, he's at a follow-up appointment at the specialist from before about another issue. The specialist pulls up the EHR, looks over his chart, and says to him, "So, what treatment did you use for that shadow on your brain?" "Shadow on my brain?" And she looks at him and says, "There was a shadow. We saw a shadow on your MRI." And he says, "I never got any treatment about that. I never even heard about it." And there's this excruciating silent moment, and then the specialist says, "Well, here it is in my note to your PCP, but you know, the EHR does have a lot of awfully small text."

Fortunately, in a follow-up scan the shadow was gone, and my
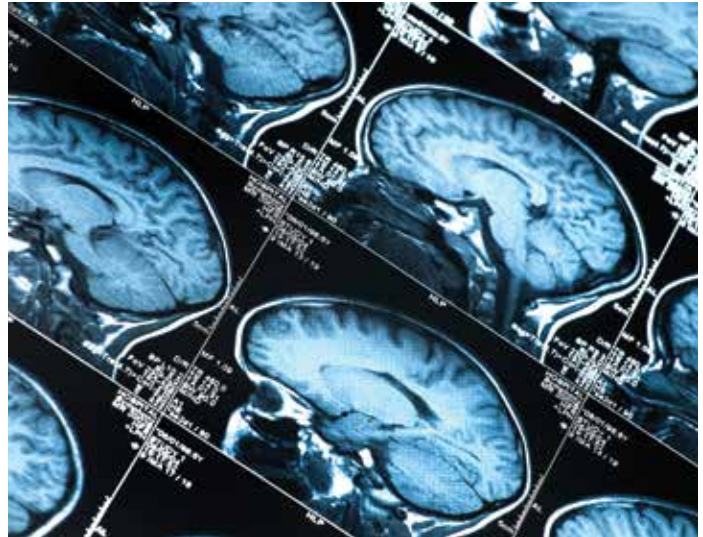
husband was fine. We all have our health care system stories. We may have left paper behind, but we have the same problem we had before: too much information gets lost during each handoff. It's not the collection of information digitally that will allow EHRs to fix these issues. It will be illuminating the big picture, illuminating the most important bits of information, and enabling communication.

Pulse: *What will be the role of the patient going forward?*

Mary Kate Foley: I think we're at a really interesting juncture in thinking about the patient experience and what the patient can pick up. I like to think that I'm a little bit more level-headed about the patient experience and what we can count on the patient doing than many other people are.

There are a lot of boutique designers in the patient outreach space. There are great little apps that patients can use to manage their pills, or count their steps. What I'm sure a step counting app will mean is that people will have access to their number of steps. What I'm not that will mean is that more Americans will be at a healthy weight. 150 years ago, a scale was something you went to the general store to use. You put in a penny and you got your weight. But then the bathroom scale were invented. At the time everyone must have been saying, "With bathroom scales, everyone can track their weight every single day, and that will help people lose weight!" But the bathroom scale hasn't really worked that way. It's not to say that we give up on patients. We need to leverage the

opportunity for empowering patients, because some will be empowered. But we also need to cast a nice, cool eye on the degree to which patients will sustain any enthusiasm about these applications and gadgets.

One of the things that we found through our research is there's a bit more sticking power if it's not just the patient charting their own course with their own apps, but if the patients realizes that their own doctor is asking them to do this. A lot of research has shown that diabetic teenagers do not like to check their blood sugar, because it makes them feel different from their peers. When an app reminds them to check their blood sugar during the day, a lot of teenagers will just override, or tell the app that they did it when they didn't actually do it. But when you say to them, "This information will also be sent to your doctor," they say, "Well then this must matter a lot." And they are more likely to do it.

It comes back to the connected and collaborative nature of health care. Right now we're in a very stand-alone phase with patients, and as we mature the EHR will connect more and more directly with patients. EHRs will facilitate the self-care that patients can do because they will be based on the relationships between the physician, the nurse, the front desk person, and the patient. And as we develop greater interoperability between EHRs, we'll have traffic across the entire spectrum of care. We'll be able to model not just what happens in one care setting or one workflow, but across this network, and we will be able to start to figure out what works in health care.

Profile

Mary Kate Foley
VP of User Experience at athenahealth

Mary Kate Foley is an award-winning design leader with over 25 years of experience in the design and usability field. Mary Kate joined athenahealth in 2008 to establish it as a center of excellence in health care IT user experience, including user-centered design, information architecture, copywriting, and usability research and assessment. Prior to athenahealth, Mary Kate successfully pioneered and/or revived design and usability initiatives at a number of companies, including IBM/Lotus, Time0 (a division of Perot Systems, Inc) and Monster Worldwide.

Analytics in Healthcare

Analytics: The Nervous System of IT-Enabled Healthcare

The healthcare industry is moving from volume-based reimbursement to value-based reimbursement that is designed to achive higher quality, lower costs, and a better patient experience. To succeed, healthcare providers are forming accountable care organizations (ACOs) and restructuring their care delivery systems.
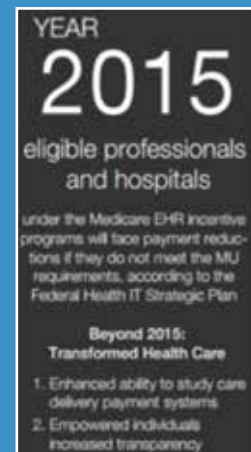
Collecting the Data

80% of electronic health information

is said to be unstructured. Clinical data, to put it mildly is full of holes.

Clinical Intelligence (CI)

30% of US hospitals

use a clinical data warehouse/mining solution, according to HIMSS Analytics.

Business Intelligence (BI)

33% of healthcare organizations use BI tools

BENFEFITS INCLUDE:

1. More cost-effective operations
2. Quality improvement.
3. Patient Satisfaction
4. Labor Costs

Performance Evaluation

YEAR **2015** eligible professionals and hospitals

under the Medicare EHR incentive programs will face payment reductions if they do not meet the MU requirements, according to the Federal Health IT Strategic Plan

Beyond 2015: Transformed Health Care

1. Enhanced ability to study care delivery payment systems
2. Empowered individuals increased transparency

Breaking the 'The Iron Triangle' with Health Care Innovations

An Interview with Dr. Shivan Mehta, Director of Operations at the Penn Center for Health Care Innovation and Assistant Professor of Medicine, Division of Gastroenterology at Penn Medicine

By Aditi Gogate

'The Iron Triangle' is a term used to describe the relationship between cost, quality, and access in various industries, including healthcare, policy making, and business. While it's been difficult to tackle all three at once, health care IT and integrated innovations have been paving the way for reaching this pinnacle in patient care. Pulse talked to Dr. Shivan Mehta, Director of Operations at the Center for Health Care Innovation, to get the scoop on how innovations currently interact with health systems, and more specifically, how they play a major role here within the Penn community.

Pulse: *How long have you been working at Penn's Center for Health Care Innovation, and what was your professional/ academic path getting there?*

Dr. Mehta: I've had a great two and a half years at the Innovation Center. I was actually a Wharton MBA student in the Healthcare Management program almost a decade ago! I started out as an Economics major in undergrad and fortunately ended up selecting Penn when deciding between medical schools. At the time, I was really interested in practicing medicine but also thinking about the broader context of delivery. I realized that while I can certainly do my best and take care of my patients, the system around us has an incredible impact on patient outcomes. Some of it has to do with how it's financed and some of it has to do with how it's organized - and understanding the operational aspect of health care delivery was really important for me.

So after medical school and then a residency in New York, I ended up pursuing a Gastroenterology fellowship back here at Penn, and reconnected with some of my mentors to help start some of the research at this Innovation Center. The idea [behind the Center] was to bring together all the great resources of the University - a business school, a healthcare management program, a medical school and nursing school, etc. - and try to take some their work and apply it to help our own health system deliver better and more efficient care for its patients.

Pulse: *That's great, so you've really been involved since the beginning. With your experience, where does the Innovation Center work in tandem with Penn Medicine? What are its goals?*

Dr. Mehta: The Innovation Center is part of the rubric of Penn Medicine, which includes both the University of Pennsylvania Health System and the Perelman School of Medicine. It has this 'tri-part' type mission of improving healthcare delivery – providing healthcare, being a thought leader while doing research, and educating the future of care. That's how Penn Medicine sees itself and we certainly align ourselves with those goals, but with a more specific focus on what we can do

to change or reimagine how our health system delivers care to our patients.

Pulse: *What do you feel are some of the Innovation Center's strongest initiatives?*

Dr. Mehta: We've been working on this concept of what we call "Connected Health," which is thinking about how we can connect with patients outside of traditional office or hospital settings. We've been working on a variety of different projects, thinking about how to bring healthcare to patients' homes and potentially leveraging technology, but also using principles of behavioral economics and social science that we've learned over the years.

One area that we've focused on in particular is improving hypertension management on a population level. About a third of the population has high blood pressure, yet only half of the patients are being effectively managed or treated even though treatments for most patients are inexpensive and relatively easy. This is one opportunity where we can really explore the needs of an entire population to understand these barriers to care. Another area of focus is colorectal cancer screening, which I find particularly important as a Gastroenterologist. There are of course a variety of cancers out there and a lot of screening tests, but many of these screening tests don't have a strong evidence base. However, one that does is for colorectal cancer. It is recommended that everybody over the age of 50 have some type of routine colorectal cancer screening but we know it's a procedure that causes a lot of anxiety and fear. That's where we see the Innovation Center's focus come alive - in terms of figuring out how to tackle issues that are really challenging to patients, and how we can use our approach and identify new areas or new delivery models to apply.

Pulse: *In this era of healthcare reform, has the focus of your work changed in any way? Particularly surrounding value-based care, delivery of care or patient engagement?*

Dr. Mehta: Right now, I think we're at a stage where we can actually start thinking about optimizing technology and using it to do things like try to bend the cost curve and

improve the value of care - that's the hope with health IT. With changes in business models and the Affordable Care Act, changes in technology and also some new insights into social sciences that we've learned from other industries, there are opportunities to be more proactive about health care; to not just manage individual patients but manage populations of patients and not wait for patients to reach out to us. We should have a better understanding of what they're doing in the context of their actual life and bring that needed form of care to patients at the right time.

Right now, an example of healthcare reform impacting Penn Medicine is the Affordable Care Act's Readmission Reduction Policy. Readmission rates are one of many potential markers of quality, and when people get discharged from the hospital, you want to avoid the need for them to come back. As of now, we still don't fully know what happens to patients in their homes and how they get their care elsewhere, and how we would be able to improve these situations. This is where our learnings and data analyses from Innovation Center projects that focus on the experience from the patient perspective will continue to be very useful to apply across the health system.

"At the time, I was really interested in practicing medicine but also thinking about the broader context of delivery. I realized that while I can certainly do my best and take care of my patients, the system around us has an incredible impact on patient outcomes."

Pulse: *Would you be able to tell us about any of your current research projects?*

Dr. Mehta: A current project involves improving medication adherence after a heart attack, and really highlights a "coming together" of technology, behavioral economics, population health, and patient care. Cardiovascular disease is a leading cause of death and disability in this country. Despite patients having this life-threatening event, they are only taking their medications about half the time after leaving the hospital. We're enrolling patients from across the country who have just had a heart attack, and giving them these remote pill bottles

which can track their usage of up to four evidence-based medications every day. Every time they open and close the cap of the bottle, it sends a message to our web-based technology platform so we can monitor and provide immediate feedback on how they're doing. We also enroll them in a daily lottery so it's sort of this "gamification" idea - it's a "regret-based" $5 and $50 lottery, where each day they'll receive a message telling them whether they've won or not. If they win, they only get the money if they took their medication the day before.

We have stepwise innovations with this too. If they don't their medications for a couple of days, we inform their friend or family member. But if they don't take their medications for five days, we then have a program advisor or a social worker that's available from our team that reaches out to them to see if there are any other underlying issues with insurance, social issues etc. It's exciting - the program is pretty far-reaching with 1,000 enrolled patients in 45 states, so it'll be interesting to see the impact of such a program and how it can be implemented for long-term success as well.

Pulse: *What would be your advice to students who are embarking on their careers in business and health care?*

Dr. Mehta: Right now, there are an incredible number of opportunities in healthcare and business. With advances in technology and the fact that health impacts everyone, we're leading the way towards something that directly impacts people's well-being, productivity and happiness. It's a great time to be involved and a great time to be a business student. The beauty of it is that all these existing stakeholders - whether its insurance companies, hospitals, pharmaceuticals or other vendors - all realize that they have to change and get better at improving health, so they're more open to people that come from different backgrounds. I'd say cast a wide net in terms

of different places to work and where you can have impact and value, and then focus on something and do really well at that - because I think there're so many areas of opportunity that it's just a matter of selecting and having passion for what you do!
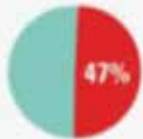
Profile

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Dr. Shivan Mehta, MD, MBA
Director of Operations at the Penn Center for Health Care Innovation and Assistant Professor of Medicine,
Division of Gastroenterology at Penn Medicine

Dr. Shivan Mehta is a gastroenterologist and the Director of Operations at the Penn Medicine Center for Health Care Innovation. He leads a multi-disciplinary team of designers, managers, and engineers to develop, test, and implement new health care delivery interventions across Penn's health system. Current projects at the Center focus on connecting with patients outside of traditional venues and managing the health of populations. Shivan also conducts health services research looking at how health care systems can leverage behavioral economics, design thinking, and information technology to improve population health through medication adherence and cancer screening. He is an Assistant Professor of Medicine at the Perelman School of Medicine, Senior Fellow at the Leonard Davis Institute of Health Economics, and Affiliated Faculty at the Center for Health Incentives and Behavioral Economics, all at the University of Pennsylvania. Shivan received his undergraduate degree in Economics at Yale University, and his medical and business degrees at the University of Pennsylvania.
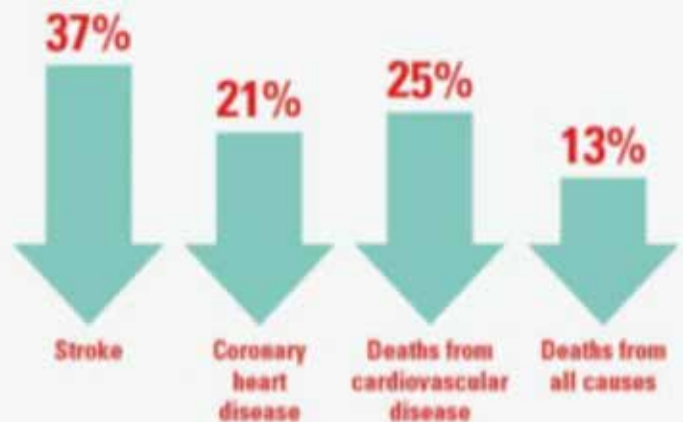
BLOCK PRESSURE CONTROL

Reducing average population systolic blood pressure by **only 12–13 mmHg** could reduce:

37%	21%	25%	13%
Stroke	Coronary heart disease	Deaths from cardiovascular disease	Deaths from all causes

ONLY ABOUT HALF of people with high blood pressure have their condition under control

47%

This infographic was developed by the Centers for Disease Control and Prevention's Division for Heart Disease and Stroke Prevention in support of achieving the Million Hearts® initiative goal to prevent 1 million heart attacks and strokes by 2017.

Where do Penn Faculty Startups Come From?

56 Number of active companies in Penn's UPstart program

82 Number of faculty members who are part of UPstart companies

2010 Year UPstart was founded

10,000,000 Dollars raised by UPstart companies

Evolutions
in Global Health

Communicating in the Changing World of HIV/AIDS

An Interview with Dr. Rupali Limaye, PhD, Monitoring Director for the K4Health Project at the Johns Hopkins Bloomberg School of Health, Center for Communication Programs

By Aditi Gogate

Effective communication and communications are an essential part of any business and play an even larger role in furthering better health, especially when behavior changes are needed. It is especially important to highlight the need for clear communication in therapeutic areas that affect disparate populations who may have limited access to care. We sat down with Dr. Rupali Limaye, PhD, Monitoring Director for the K4Health Project at the Johns Hopkins Bloomberg School of Health, Center for Communication Programs, to learn more about how innovations in communication has affected her work and the HIV/AIDS landscape over the past several decades.

Pulse: *Could you tell us about your most recent initiatives at the Center?*

Dr. Limaye: My international work in Africa has been largely focused on HIV-related knowledge management and implementation science, which effectively means determining how best to integrate research findings and evidence into health policies and practices across the sector. Many of our projects center on ensuring treatment guidelines and current disease-related news are accessible across a variety of entities working to improve health and populations with varying levels of literacy. Most recently, I've been spending time trying to better understand the potential role that communication can play in coordinating public health efforts, with a focus on sexual reproductive health.

One our HIV prevention programs, the Malawi BRIDGE project, utilizes dedicated health workers to inspire a collective response from families and communities of Malawi to stop the spread of HIV. With this project, we just published the results from a study that found entertainment education (i.e. radio programs) could be used to encourage girls to stay in school, set career goals and empower them to make healthier choices, thereby decreasing their risk of contracting HIV/AIDS. It's just one example of how using appropriate means of communication in the right contexts can really go a long way in decreasing risk of exposure.

Pulse: *What has been the most challenging aspect of communications planning in the global sphere?*

"Every step of any health regimen creates an added need for better communication practices. Most recently, we've seen this in the West Africa Ebola situation, where there is pressing need to use knowledge management - getting the right information to the right people at the right time - to appropriately educate people about the disease and how it can mitigated from both population and health professional perspectives."

Dr. Limaye: Communication is the glue between science and research, and the way in which we can nudge our target populations to engage in healthier behaviors. It's the driving force for successful programming and within treatment contexts such as HIV and adherence. Communication allows us to create a link between science and the media, or public. However, communication doesn't fall so neatly into health care, and that's why advocating for its inclusion is important. This is particularly the case when talking to funders. In many ways, it's easier to promote a biomedical solution for HIV management (i.e. encouraging more circumcisions in a population), and the need for communication is unfortunately hard to quantify. Most individuals generally see communication as advertisements and public service announcements, but effective communication can be used for a number of issues within health, such as patient advocacy and can also address supply issues such as medication stock-outs.

Every step of any health regimen creates an added need for better communication practices. Most recently, we've seen this in the West Africa Ebola situation, where there is pressing need to use knowledge management - getting the right information to the right people at the right time - to appropriately educate people about the disease and how it can mitigated from both population and health professional perspectives. I think we have made a fair amount of progress as to how communication can be used from a social and behavioral lens, but we need to think more about the technologies we have presently, and how to leverage them to communicate appropriately moving forward.

Pulse: *How has HIV programming changed over the years in relation to an increase in innovation in healthcare? Has there been a shift in focus?*

Dr. Limaye: In the beginning stages of HIV programming, the focus was on prevention, care and treatment. Especially with PEPFAR (President's Emergency Plan for AIDS Relief), which helped anti-retroviral treatment gain momentum. As treatments have improved through innovation and become more effective, the focus has shifted toward ensuring adherence to medications; the idea of using these treatments as prevention for further spread of disease and complications. Now, the pendulum has shifted back to treatment, with a renewed focus on multi-risk populations and marginalized communities. I think many of us working in HIV/AIDS wonder if we have normalized HIV/AIDS through public health messaging. Science tells us that we can now help people living with HIV/AIDS live longer and with fewer health complications, instead of just preventing deaths, which is

where the epidemic was several years ago. There is now a stronger focus on a human rights approach and exploring other biomedical innovations to help with prevention efforts, including making pre-exposure prophylaxis (PrEP) or microbicides more widely available.

Pulse: *Specifically, what role do you think social media or mobile health technologies have in the rollout of communication programs in more resource-scare locations?*

Dr. Limaye: It's pretty fascinating. Social media has these interesting components, because on one level it's a seemingly personal private network, but on another level it plays a large role in showcasing behaviors that may not be seen as so healthy and has changed the way we make day-to-day decisions. Mobile health technologies or mHealth can also really play a transformative role in helping with medication adherence, supply and demand of resources, and also just

allowing collection of real-time data. It's great for us to explore how we can use knowledge management to reach people on their phones. You know, it is ironic, but for people in the most "resource-scarce" locations everyone in the community has at least one cellphone but most may not even have electricity. It can be difficult to engage and provide information in these areas, as they may not have access to the resources they really need. However, with mHealth, we have an opportunity to learn how to create effective two-way communication, instead of just pushing messages, and incorporate the ability to receive feedback from providers as well.

Pulse: *How do you evaluate the success of your programs?*

Dr. Limaye: Our Center conducts a lot of research surrounding the best methods of evaluation, but as we know, it is still difficult to evaluate communication work. The effects may seem small in magnitude, but we're looking into innovative ways of seeing how health products or behaviors are diffused and impacted through communication. Ultimately, we want to reach and impact as many of these marginalized communities as possible, while still monitoring the progress of our larger communities.

Pulse: *What would be your advice to students as they are embark on their careers?*

Dr. Limaye: I think for those who are especially interested in this health communication, they should really think about how communication can play a role in all aspects of your job (or future job) and find out where we have needs to create better solutions. We all could definitely benefit from spending more time learning from the business and private sectors, as they are able to have higher levels of efficiency - a quality that sometimes gets lost in our public health world. Finally, do the best you can in your job. Given the quickly changing healthcare landscape today, it's important to be an enthusiastic and an adaptive learner, rather than having the perfect type of experience for a particular job. Learn as much as you can, and incorporate everything into your best work!

Profile

Dr. Rupali Limaye, PhD.
Monitoring Director for the K4Health Project at the Johns Hopkins Bloomberg
School of Health, Center for Communication Programs

Rupali J. Limaye, PhD, is a social and behavioral scientist and is the research and monitoring director for the K4Health project at the Johns Hopkins Bloomberg School of Health, Center for Communication Programs. She completed her doctoral degree in social and behavioral sciences at the Johns Hopkins Bloomberg School of Public Health with a focus on health communication and sexual and reproductive health, and was previously the director of the Global HIV/AIDS Program at the Center. In her 10 years of working in global health, she has worked in Ethiopia, Haiti, India, Kenya, Lesotho, Malawi, Nigeria, South Africa, Tanzania, and Uganda, on topics including family planning, HIV prevention, care and treatment, maternal and child health, and alcohol. She has been published in international peer-reviewed journals and is associate faculty at the Johns Hopkins Bloomberg School of Public Health, where she teaches graduate classes in persuasive communication, behavior change theory and social marketing. She also holds an MA in international affairs and an MPH in global health.

The average cost of
telehealth services is
$40-$50

But **70%** of respondents
said they wouldn't pay
more then **$10** for them

40% video chatting today would
email their doctors, vs 26% who
don't currently use video chat.

35% would text with a doctor,
nurse or other care provider, vs
23% who don't use chat.

20% would video chat with a care
provider, versus 4% who don't use
video chat.

Telemedicine:

Lessons from Teledermatology in the United States and Africa

An Interview with Dr. Carrie Kovarik, Associate Professor of Dermatology at the Hospital of the University of Pennsylvania

Technology is allowing physicians and patients to interact much more seamlessly and it has the power to fundamentally alter the provision of health care both in the United States and abroad. In the following article, Pulse speaks with Dr. Carrie Kovarik to learn more about her experience in telemedicine and teledermatology both in the United States and around the world to get a sense of how the field has evolved and where it is heading particularly in light of a shifting regulatory framework within the United States.

Pulse: *How did you first get interested in telemedicine and more specifically teledermatology?*

Dr. Kovarik: I am an engineer by training; I studied electrical engineering as an undergrad. I have an interest in technology and dermatology, and I think that telemedicine could really help bring dermatology care and education to patients with skin problems and HIV.

When I was in my internship in 2001, I ran a Pediatric ward in Swaziland during the middle of the HIV epidemic. There was no access to antiretroviral medications, so it was a really challenging time when a lot of people were dying and very little could be done. I was on route to my dermatology

residency and I saw so much skin disease such as Kaposi's Sarcoma; it gave me a sense of the burden of skin disease in the HIV population. At the end of my residency, I began to work with the Baylor International Pediatric AIDS Initiative (BIPAI) which was working to scale-up antiretroviral therapy for kids all over Africa.

Pulse: *What was the first telemedicine system that you helped to create?*

Dr. Kovarik: After completing my fellowship, I used my own money to travel to five of the BIPAI clinics across Africa and I trained them to use an Internet-based teledermatolgy consult site that I created that is still running today (africa.telederm.org). You simply take a photo and upload it to the website. It is a very simple site; you can even use dial-up Internet and it was built for the lowest common denominator.

One of the keys was building a personal relationship with all of the clinicians so that they were confident about who they were sending the photos to for the dermatology consult. People knew about the technology, but there was still anxiety over Internet-based technology. This is because computers were often locked in a hospital manager's office or you had to pay to go to an Internet café – people generally did not have computers in their homes at this time – this was around 2007. You had to sit down with people and walk them through how to do it.

Since 2007, we have had about 1500 consults in 15 countries to the website which is still running. It is currently sponsored in part by the American Academy of Dermatology and runs for just about $2000 a year. There are several people who are responsible for reading the consults in the United States. We have also tried to get people within each of the countries to answer the consults, but there are not a lot of dermatologists within the countries, let alone people who have the time to do it.

Pulse: *How has this teledermatology consult system evolved at all over time?*

Dr. Kovarik: Over time we realized how much traction cell phones have gained, and in 2011 we added an iPhone app. The usability skyrocketed after the app, because people could use the phones in their pockets to send cases to the site. People were very familiar with phone-based technologies because everyone has at least one phone, sometimes multiple, so transitioning to a phone-based service was really the key to success. Mobile phone usage is limited buy the cost however because people don't tend to have unlimited data plans.

Pulse: *How is this system routinely used? For example, if a child with HIV living in rural Tanzania needs to see a dermatologist, what does their diagnosis and treatment look like?*

Dr. Kovarik: It depends significantly on which clinic they go to. If they go to one of the health posts and the physician treating them knows about the BIPAI clinic in the next town over, the patient goes to that site and they determine that they need a teleconsultation. If a biopsy is needed, they biopsy the lesion at the BIPAI site and send it to me. I receive the specimen at Penn within about five days, and then I process it here and get the answer within two days. So there is about a one-week turnaround for the patient. Without this telemedicine system it would however take the patient months and months to get the biopsy and diagnosis. There are clinics in Tanzania that now have pediatric oncologist and have trained health care workers on how to initiate complex chemotherapy agents.

"In urban Philadelphia, we have an access problem similar to the way that we have an access problem for rural populations or for our elderly patients who have trouble getting to the office. Telemedicine can bridge all of these access problems."

Pulse: *What is the limiting step in this process?*

Dr. Kovarik: It is the diagnostic step – getting someone to process the pathology if a biopsy is needed.

Before this teledermatology system was in place, many more assumptions were made. We used to treat all of the kids who presented with large lymph nodes like they had tuberculosis or lymphoma and they would not respond at all to treatment. But we have done research by getting a biopsy of the lymph node that shows that about 90% of the children actually have Kaposi Sarcoma instead. It makes you really think about how many kids got delayed treatment or wrong treatment because we didn't have the resources to make the correct diagnosis.

Pulse: *In the context of the United States, has the definition of telemedicine, particularly as it pertains to billing and reimbursement, shifted over time and if so, how?*

Dr. Kovarik: In the U.S. we have been going back and forth on the definition. There is debate about the definition due to its implications for reimbursement: what is proper telemedicine and what is not. Telemedicine that is appropriate does not include email, text or fax. Yes, these are forms of electronic communication, but they are not appropriate means for many reasons.

Pulse: *What types of telemedicine are currently reimbursed in the United States?*

Dr. Kovarik: The definition of telemedicine and what is reimbursed is different is different in every state. This partially because the definition is different for Medicare and Medicaid in every single state. It gets very complex.

Most states reimburse for live video telemedicine, but not all of them. Medicaid reimburses for live video in about 47 states. Store-and-forward Telemedicine, which is used for photos, is reimbursed by Medicaid for dermatology services in 11 states.

Then you get into a distinction as to whether it is provider-to-provider or direct from the patient. This is a new sticky topic - whether a patient can submit photos directly to a doctor and the doctor can respond to the patient as a telemedicine consult and get paid for it. Most states are not allowing for that. Texas has been a leader in this area and has said that the only way patient-to-provider telemedicine can be reimbursed is if the patient has first been seen in person by the physician and they have an established relationship. This distinction is mostly to block some of the high volume – give me an antibiotic for $40 - corporate telemedicine pop-ups.

Pulse: *What is the greatest need that teledermatology programs meet in the United States?*

Dr. Kovarik: Access. We have our cell phone-based telemedermatology program in Philadelphia called AccessDerm, a program of the American Academy of Dermatology, which was made to primarily improve access. It is being used in the Philadelphia Health Centers and four other clinics to serve patients who either have no insurance or have very poor insurance which would limit their ability to get a dermatology referral.

Not all dermatology practices accept Medicaid, and those that do might only have a few spots per week. Therefore, the next available Medicaid visit may be in many months. Yes they have access, but not good access. In urban Philadelphia, we have an access problem similar to the way that we have an access problem for rural populations or for our elderly patients who have trouble getting to the office. Telemedicine can bridge all of these access problems.

Even for people who have okay access to routine dermatology, it is difficult to get access to specialty dermatology. These patients could be easily triaged and told whether or not they require specialty services. We are currently working with a number of large insurers to show that we can improve the quality of care through telemedicine triage so that their members can have quicker access to appropriate specialty services. There are also studies that show that teledermatology in the E.R. or in urgent care setting can save a lot of money because we can correctly diagnosis cellulitis and other things that don't require hospitalization. Putting telemedicine in the right places can make both the payers and patients happy.

Pulse: *What changes do you foresee in the legislative and regulatory landscape? Do you think that we will move away from the ability just get reimbursed for live video towards store-and-forward and other forms of Telemedicine?*

Dr. Kovarik: The legislation is going to change. Right now there are 192 active pieces of legislation at the state level and all of them have something in them about payment for telemedicine services. For dermatology, we are moving more towards store-and-forward systems because video is so difficult to do correctly.

I think that it will still probably be done on the state rather than federal level, but we are getting pushed into a corner. There is so much evidence out there that telemedicine works, but it is slow, especially when it is on the individual state level.

Pulse: *You spoke about discomfort with technology with regard to launching telemedicine services in Africa, but what are the barrier to getting physicians and patients in the US to feel comfortable using systems like this?*

Dr. Kovarik: We have seen that providers need training. There is more of a barrier for providers than patients. Patients have been overwhelmingly accepting. I have not had a patient say "no" yet though this is probably because we are asking patients who need care. We are not asking patients who are about to walk into their dermatology appointment at Penn, we are asking patients who really need access.

We are also asking patients who are familiar with the technology - everyone has a cell phone and everyone has a digital camera. The providers though sometimes don't understand the entire concept of telemedicine. They will ask about what happens if someone sees the photos on their camera roll. But, they don't understand that the app ensures nothing is stored on their phone and everything is cloud synced.

Sometimes providers act like we are doing something totally renegade for the first time, but this has been going on since the early 1990s and is well researched. Dermatology was one of the first groups to pursue telemedicine and there are hundreds, if not thousands, of research papers showing that it is validated and has been done well. But, once you sit down and show a provider how it works they appreciate that it is very simple and get it quickly. Once a provider uses it, they see how easy it is. It is really all about education, I think.

Pulse: *In the United States your work primarily focuses on Dermatology, but in Africa you have done research in other medical specialties. What do you see as other important emerging areas of telemedicine in both Africa and the United States?*

Dr. Kovarik: In Africa, we have done a lot of work in cervical cancer screening with the see-and-treat method which is an alternative to the Pap Smear used in the United States because it requires less pathology. Telemedicine can be a way to help with this method. We also have some programs coming up with ophthalmology. There are some very advanced ways of taking pictures of the retina with a cellphone as well as corneal photos. Also, in Oral medicine you can actually get very good photos of the mouth with and without cell phone attachments. There are also some cell phone attachments that allow you to get nice photos of histology slides that will be useful in telepathology.

Profile

Dr. Carrie Kovarik is a an Associate Professor of Dermatology, Dermatopathology and Infectious Diseases at the Hospital of the University of Pennsylvania and an Associate Professor of Medicine at the Perelman School of Medicine. She specializes in tropical, infectious and HIV-related dermatology. Dr. Kovarik is the Head of Dermatology, Informatics and Telemedicine for the Botswana-UPenn Partnership and the primary dermatology consultant for the Baylor International Pediatric AIDS Initiative.

States with Coverage for Telehealth Services
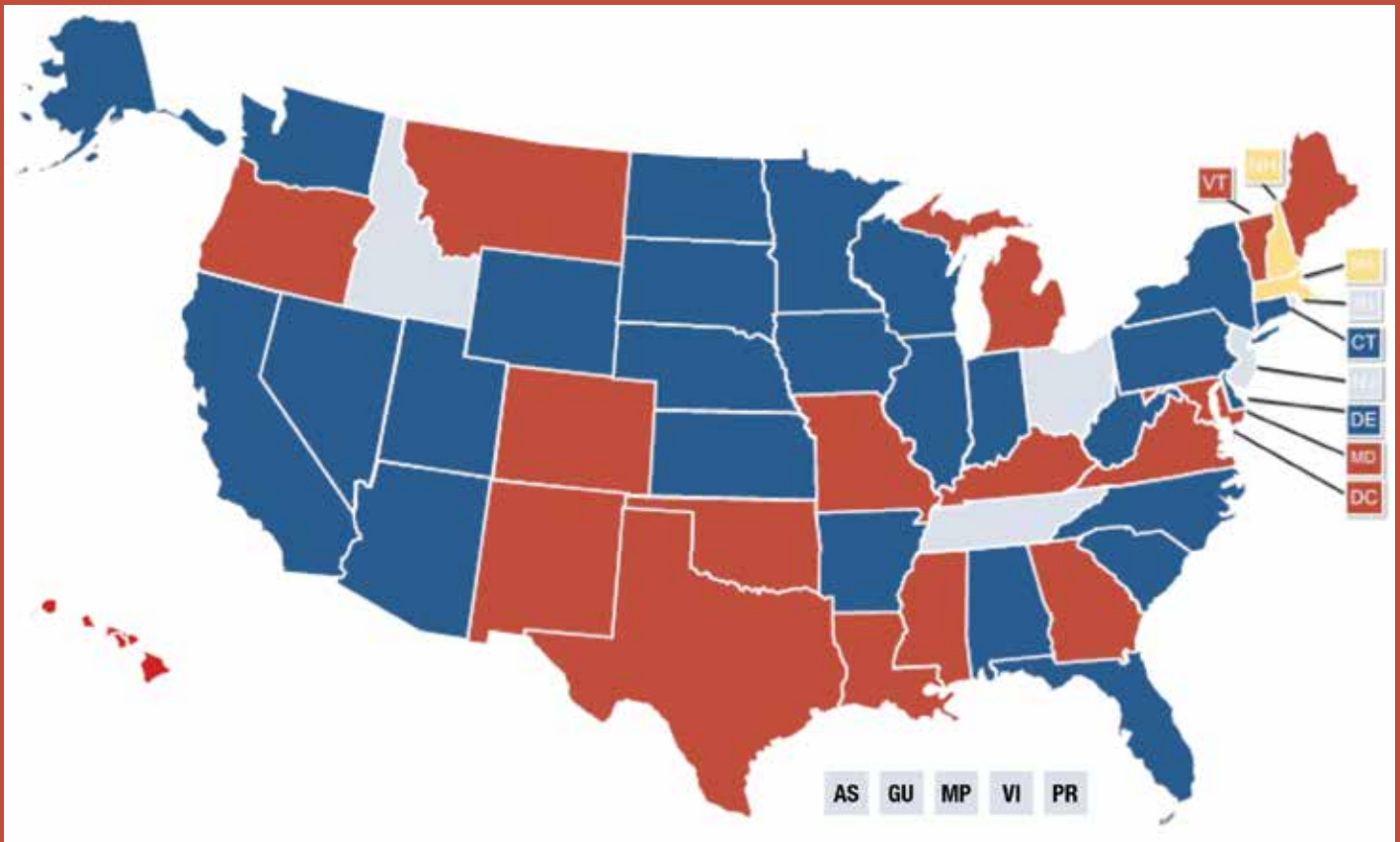
Medicaid and Private Insurance Coverage for Telehealth

Medicad Coverage for Telehealth

Private Insurance Coverage for Telehealth

No Required Coverage for Telehealth/No Data

Wharton's Healthcare
Management
Program

The 2014 HCM Alumni Conference

On Friday October 31st, the Wharton Healthcare Management Alumni Association (WHCMAA) convened once again in Huntsman Hall to host its annual alumni conference. This year's theme was "Healthcare Transformation: The Dance of Disruptors, Incumbents, and Rule-makers". The all-day affair was well-attended, with nearly one hundred and fifty alumni and students present throughout the event. With four hundred and twenty five active members, nearly twice that of other Wharton alumni clubs, the WHCMAA is alive and strong.

Conference Co-chairs Bryan Bushick WG'89 and John Harris WG'88 kicked off the day by highlighting some of WHCMAA's achievements over the past year. These include raising over $600,000 to support an alumni scholarship in honor of June Kinney, raising $50,000 to support current students, and planning an astounding thirty five annual events.

Mitchell Blutt, MD, CEO of Consonance Capital Partners and Mark Smith, MD, MBA, Founding President, California HealthCare Foundation kicked off the content portion of the conference

"The biggest obstacle thus far (in reform) is the government which has been unclear and inconsistent about what it is solving for in ACA implementation."

with a lively debate centered on whether or not healthcare was truly transforming from its current broken state to the value-based ideal espoused, at least in part, by the Affordable Care Act (ACA). The speakers generally agreed that the system was moving in the right direction, but Dr. Smith listed market consolidation as a huge unaddressed problem while Dr. Blutt cited patient cynicism. When the "Choosing Wisely" campaign was brought up the two had opposing views. Dr. Smith emphasized that incentives ran counter to the aims of the campaign and that physicians were generally reluctant to have these conversations. Dr. Blutt instead argued that a societal ambition to prolong life often flies in the face of being selective about medical procedures.

The conference keynote speaker was Rahul Rajkumar, MD, JD, Acting Center Deputy Director for Policy for the Center for Medicare & Medicaid Innovation (CMMI). The presentation began with an an overview of the fifty or so models and studies that CMMI is pursuing, including

recent results from the Pioneer ACO, Bundled Payment, and Comprehensive Primary Care models. Dr. Rajkumar provided a unique perspective on the incredible and impressive activity underway at the federal government, and the extent to which the government is working with the private sector to implement ACA solutions. Many participants had specific questions about the early evaluation results, in particular whether there was selection bias, but overall the keynote was well-delivered and highly informative.

The final all-conference presentation featured three panelists and focused on the new payer-provider landscape in the context of value-based care. The first panelist was Joe Schulman, Executive Director of of North Shore-LIJ Care Solutions. Mr. Schulman's focus was on the alignment of compensation models with his definition of value: what matters to the patient and their family. He admitted that while NLIJ is largely self-employed and still mostly providing traditional volume-based care, the system is making concerted efforts to invest in value-based systems for the future.

The second panelist was William Winkenwerder Jr., MD, MBA who has served as Assistant Secretary of Defense for Health Affairs and most recently as CEO of Highmark Health. Dr. Winkenwerder stated that providers had reached a major decision point: whether they would move to population health or specialize their care delivery, and that in either case they would need to be well-capitalized. In Dr. Winkenwerder's

view, the biggest obstacle thus far is the government which has been unclear and inconsistent about what it is solving for in implementing the ACA. The final panelist was Aran Ron, MD, the Chief Medical Officer of Oscar Insurance corporation. Dr. Ron's suggested that the most significant component of reform was changing provider culture and bringing beneficiaries into the decision-making process in meaningful way.

The remainder of the afternoon was spent in two break-out sessions. The break-out sessions covered a wide range of topics including cutting-edge device companies, mHealth, and insights from Capitol Hill. The nine panelists during these break-out sessions offered a range of presentations from business model overviews to more intimate discussions about the nature of their work and the major problems they faced. The day ended with a well-attended reception which allowed panelists, alumni, and students alike to share stories from the conference and reminisce about their business school experience over cocktails. The day started much as it had ended: meeting new colleagues, finding old friends, and engaging head on with the healthcare issues of the future.

Wharton Health Care Management
Program Overview

The Health Care Management Department is one of the oldest, most distinguished, and most comprehensive in the health care field. Graduating its first class of MBA students with a specialization in Health Care Management in 1971, the department was in the vanguard of educating health care executives and leaders within the general management curriculum of a business school, breaking from the traditional public health and health administration models. The doctoral program was established in the mid 'eighties, broadening the department's mission to encompass the training of future health care management and economics scholars. The creation of the undergraduate concentration, also in the mid-'eighties, provides Wharton students and students throughout the university with education and training in health economics, management, and policy. Offering more course electives in health care than any other business school-based program, every important sector of health care is covered in depth.

Today, the department is a vital community of internationally renowned scholars who have spent their careers following the evolution of health care services and technology, domestically and globally, and researching important management and economic questions arising from all aspects of this complex enterprise. The HCM faculty collaborate with medical, engineering, nursing, and other faculty from around the university to create interdisciplinary research and knowledge. HCM students have countless opportunities to work with faculty and health-related research centers throughout the university. Health care executives, entrepreneurs, consultants, investors, and other practitioners are involved as part time lecturers who bring the world of practice to the classroom. The Annual Wharton Health Care Business Conference organized by HCM students attracts more than 600 alumni, health care professionals, and national health care leaders from every subsector of health care. It has become a nationally recognized forum for the exchange of ideas about issues in health care business and management innovation. A vast network of alumni who hold leadership positions in every part of health care work in close partnership with the department in activities such as guest lecturing, recruiting and mentoring students, and providing access to business data and practices to faculty engaged in research projects. This close-knit community of scholars, students, alumni, and practitioners is widely considered a leading source of talent and leadership for the health care field.

Wharton Health Care Management
Student Organizations

Central to the Wharton Health Care Management student experience is each individual's ability to shape and participate in a number of dynamic student-run initiatives. We have highlighted some of these activities below.

Wharton Health Care Club

The Health Care Club organizes professional and social activities for all Wharton graduate students who are interested in exploring opportunities in the healthcare industry. Members share their knowledge and perspectives in addition to interacting with current industry leaders to develop an understanding of the issues facing hospital, physician, managed care, pharmaceutical, biotechnology, and medical device organizations. Please contact Jennie Funk (jfunk@wharton.upenn.edu) or Jonathan Hahn (jonhahn@wharton.upenn.edu) for further details.

Wharton Health Care Board Fellows Program

The Health Care Board Fellows Program strives to cultivate and enhance mutually beneficial learning relationships between Wharton's Health Care Management Program and the nonprofit community. Program participants gain first-hand experience as nonvoting board members on the boards of socially responsible nonprofit organizations, while those organizations benefit from the professional experience and training of current Wharton MBA students. Please contact Dan Kaufman (kaufd@wharton.upenn.edu) for more details.

Wharton Global Health Volunteer Program (WGHVP)

WGHVP is designed to give Wharton Health Care Management students the opportunity to participate in global healthcare related projects for NGO's with limited resources. WGHVP trips are student-organized, student-run, and student-led. Projects give participants exposure to healthcare challenges in the developing world as well as the opportunity to work closely with organizations on the ground to develop viable strategies to improve their operations. Please contact Kelly Cheng for further details (kelcheng@wharton.upenn.edu).

The Penn Biotech Group

PBG Consulting offers student consulting services to players in every sub-sector of the healthcare industry. Our consulting teams draw membership from a number of graduate schools across Penn, including Wharton, the Perelman School of Medicine, and the School of Engineering and Applied Sciences. PBG Consulting's goal is to provide graduate students the opportunity to gain hands-on consulting experience analyzing a broad range of real-world business issues confronting healthcare companies today. Please contact info.pbgconsulting@gmail.com for more information.

The Wharton Digital Health Club

The Digital Health Club serves the needs of the growing community at Wharton interested in changing the healthcare system through enabling technology businesses. The Digital Health Club brings in its own speaker series, arranges site visits to health care tech firms in San Francisco, Philadelphia, and New York, administers a Startup Weekend event, and organizes consulting projects for healthcare firms interested in expanding their use of predictive analytics. Please contact Daniel van den Bergh (danielva@wharton.upenn.edu) or Emily Reid (reidem@wharton.upenn.edu) for further details.

Editors-in-Chief

Nick Bartz WG'16

Nick graduated from Yale College in 2010 with a B.A in History. After graduation, Nick worked for the Advisory Board, a health care services company in Washington D.C, in their Research and Insights Group. As an Analyst and then Consultant with The Advisory Board, Nick served a range of clients across the hospital, physician, and supplier space, focusing on managed care and IT investment strategies. After graduation, Nick plans to work either in provider strategy or digital health.

Alli Chandra WG'15

Alli graduated from Harvard College in 2010 with an A.B. in Government. Before joining the Wharton Healthcare Management program, Alli Chandra worked for the Center for Medicare and Medicaid Innovation, serving as Special Assistant to the Director. Prior to becoming Special Assistant, Alli was a Program Officer on the Pioneer ACO Model. As one of the model's operational leads, she helped to design the IT systems that currently deliver Medicare claims data to Pioneers. As one of the first Innovation Center employees, Alli was also involved with start-up activities and the development of the Innovation Center in its early stages. Over the summer, Alli worked as a management consultant with McKinsey & Company. Alli plans to work with providers in the post-acute space.

Bernie Zipprich WG'16

Bernie is a Health Care Management student and Kaiser Scholarship recipient in the Wharton MBA class of 2016. Prior to Wharton, he spent four years advising health services clients through the Health & Life Sciences Practice of Oliver Wyman in New York City. At Oliver Wyman, Bernie focused on business model innovation and growth strategies. Following business school, he is interested in applying those insights to early stage, high growth companies in the healthcare industry. He has a degree in economics from Harvard College, class of 2010.

Staff Writers

Aditi Gogate MPH'15

Aditi Gogate graduated from New York University's Stern School of Business in 2010, with a Bachelor of Science in Marketing, International Business and Psychology. She is currently a Master of Public Health candidate at the University of Pennsylvania, and Research Assistant at the Center for Health Behavior Research. Prior to enrolling at Penn, she worked for 3 years within the healthcare practice of Havas US, a public relations agency, where she provided communications support for various pharmaceutical brands. She is graduating the Master's program this May, and plans to pursue a career in health communications with a focus on patient advocacy and disease education.

Matt Nix WG'16

Matt graduated from Tufts University in 2009 with a B.A. in mathematics and quantitative economics. After a year and a half as an electricity market analyst, he moved to the health care field as a data scientist at athenahealth. For the past several years before coming to Wharton he worked on a wide variety of data-driven projects at athena, including optimizing internal operations, writing content for the company's blog, building a syndromic surveillance system, assisting in app development, and supporting the publication of reports including Payerview and ACA View. Matt is currently pursuing an MBA in Health Care Management at the Wharton School, where he is also the VP of Finance for Wharton's Health Care Club, VP of Startup Weekend Health for the Wharton's Digital Health Club, and a Digital Health Analytics Consultant with the Digital Health Club.

Patrick Purdy WG'16

Pat graduated from Yale College in 2007 with a B.S. in Biology. After graduation, Pat worked at Euro RSCG Life, a pharmaceutical advertising agency, in New York for three years in their strategic planning group. Pat then moved to Sagent Advisors, a mid-market investment bank, in San Francisco, where he covered life sciences and healthcare services. After two years with Sagent Advisors, he moved to New York to join SFW Capital Partners, a private equity fund investing in analytical tools and services. After graduation, Pat plans to return to the healthcare services sector, likely in an operations or investing role.

E. Brooks Riley WG'16

Brooks is currently an MD/MBA student at the University of Pennsylvania and plans to pursue residency training in pediatrics. She ultimately hopes to balance clinical pediatrics with an interest in hospital operations and quality improvement. Prior to medical school, Brooks worked for the Pew Charitable Trusts in its state policy division and the Center for Health Incentives and Behavioral Economics at the Leonard Davis Institute. She has also worked on Telemedicine projects as part of the Botswana-UPenn Partnership in Gaborone, Botswana. Brooks has a B.A. in Human Biology from Stanford University.

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